# THE GARDEN MAGAZINE

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# THE
# GARDEN MAGAZINE

*Devoted to Planting and Managing the Grounds About the Home*
*and to the Cultivation of Fruits, Vegetables and Flowers*

Volume XV

February, 1912, to July, 1912

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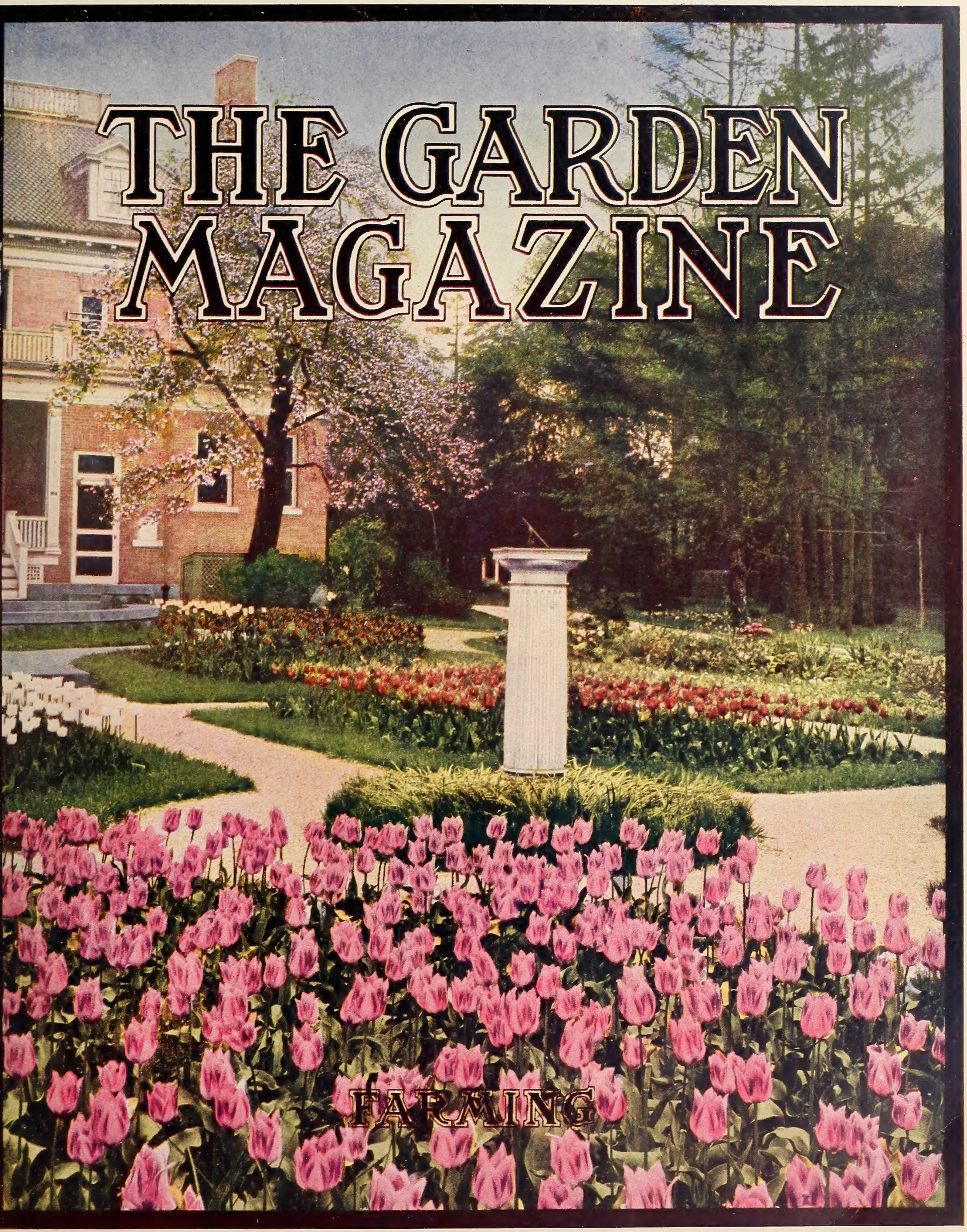

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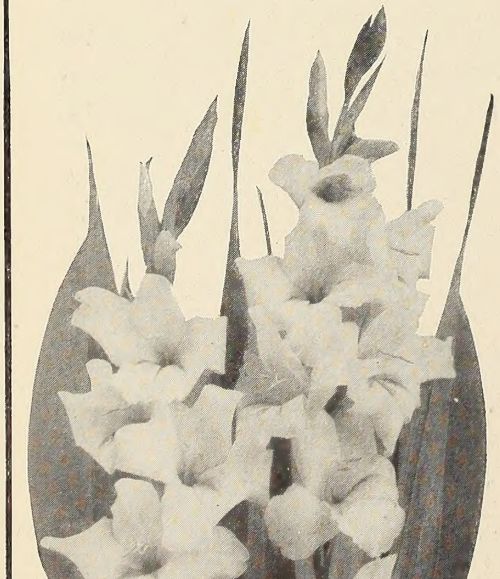

It is a white variety, wonderful in purity, size and vigor, worthy the place of honor in a king's garden. It will be in hundreds of American gardens this season. I want it in **yours.** I know how thoroughly you will enjoy it. It will be a delight to you every hour of every day it is in bloom. It is a Groff Hybrid, the crowning achievement of the most famous hybridizer of gladioli in the world. I specialize in Groff's Hybrids. I control over 75 per cent more of the varieties comprising Groff's Hybrid Seedlings than any other grower. In fact the whole of this important introduction is in my hands.

### Here is the Reason Why Cowee Gladioli Bulbs Are Best

It is because I grow nothing but Gladioli. On my Meadowvale farm are 15,000 varieties. I live with them, study them, love them. This is why when you order Cowee bulbs you are sure of getting just what you order, every bulb, large, sound, healthy, sure to produce vigorous plants and a profusion of bloom. No flower in the world is easier to grow. None gives such large returns for so little care. No matter what your soil, you can grow the Gladiolus.

### A Little Book Free — "The Uses of The Modern Gladiolus"

It will tell you just how to grow this splendid flower; how to use it decoratively, in the garden and as a cut flower indoors. It is beautifully illustrated by the wonderful new French color process. Many of the choicest varieties of Gladioli are shown in their exquisite natural tints. It will tell you all about the wonderful new variety, Peace, and the cream of the named varieties of the world. If you are interested write. I will send you a copy free.

**ARTHUR COWEE, Meadowvale Farms, Box 82, Berlin, N. Y.**

# Plan Your Out-Door Pictures Now!

***Our book "Plants and Plans for Beautiful Surroundings" will help you***

EVERYTHING for garden beauty and picturesque landscape effects. *You've only to choose.*

Wagner Nurseries are growing in fame for the vigor and completeness of their stock and the careful, expert packing for shipment.

If you've a garden, large or small, or want one; if there are spots to be "planted out" with trees and shrubs; if you've any garden fancy from a group of Delphiniums at the door to a creeper for an old wall, write Wagner. You will be assured not only of superb stock but of authoritative assistance in the important matter of flower-and-shrub combinations, trees-grouping, and the rest.

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*Wagner Landscape Service, identified with the best landscape work in the country, is employed to assure every Wagner client success.*

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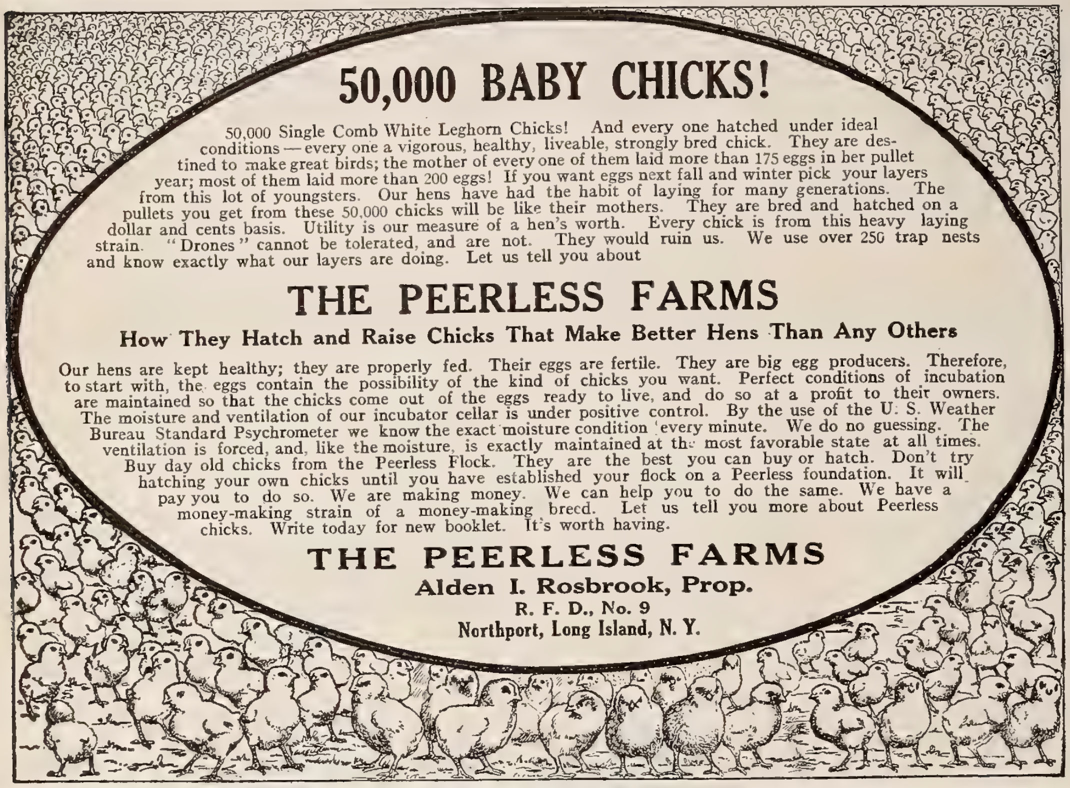
Information about the selection or care of dogs, poultry and live stock will be gladly given.

Address INFORMATION DEPARTMENT, THE GARDEN MAGAZINE, 11-13 W. 32d Street, New York.



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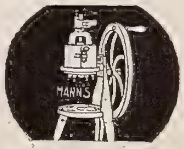

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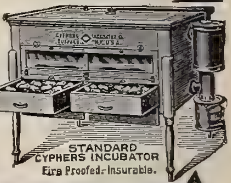

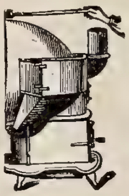

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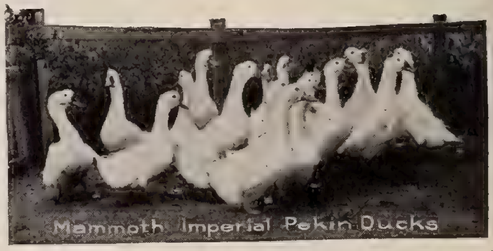

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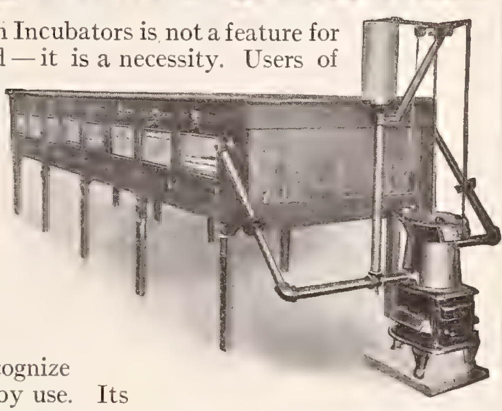

The sectional principle of the Hall Mammoth Incubators is not a feature for rare or exceptional cases of additions wanted—it is a necessity. Users of Hall machines succeed. They must have room for enlarging—expanding—their business. "Hall makes success."

You can start with an 1800-egg machine and add sections to it as desired. The same Hall Furnace will care for the additions up to 3,600-egg capacity. To enlarge beyond that size it is only necessary to attach a larger Hall Furnace, when the machine may be extended to 20,100 eggs.

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Gives information regarding Poultry

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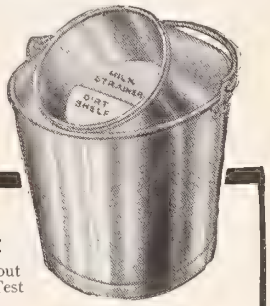

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to prove to you that it's the best thing in the milk pail line you ever saw. Simply ship it back if you don't like it. We'll pay express both ways. No other milk pail ever made like it. Look at this picture. There is a separate shelf for a dirt catcher. Not a particle of dust, hair or filth can get into the milk. Dirt is kept dry and thrown out, not wet and allowed to "trickle" into the milk to taint it and make it sour quickly. That explains why it is approved by all dairymen, doctors and pure milk officers. Made extra strong. Right pattern for easy washing and handling milk. Price $2.50. Ask your dealer. If he hasn't it we will send trial pail prepaid. See how it will build up your reputation for pure milk.

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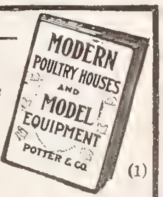

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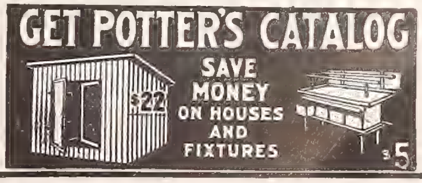
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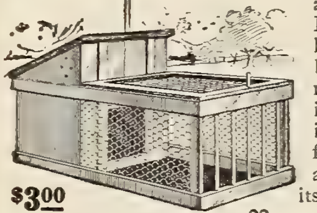

For a hen and her chicks and while she is sitting. Gives protection from rats, skunks, hawks, and other enemies. Insures larger hatches—fewer broken eggs. The runway is 20 x 24 inches. This coop is just the thing for colony raising and has proved its success for 22 years. Shipped knocked down. Size, 2 x 4 ft., 2 ft. high.

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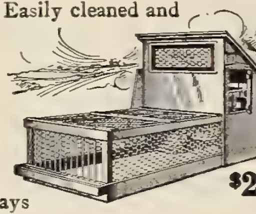

Fitted complete with nests, fountain and feed trough. Sanitary. Easily cleaned and aired. One man can easily raise several hundred birds. Nicely painted. Can be put together in fifteen minutes. Winter or summer the stock is always comfortable. In stormy weather the run may be covered at top and sides, giving protection and scratch room. Size, 10 x 4 ft., 5 ft. high.

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TRADE MARK WIGWARM

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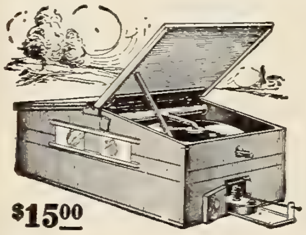

Uses the least oil of any brooder made. Storm proof. Hot water and hot air heating combined gives perfect healthful ventilation. No danger of over-heating and an even temperature is maintained in the brooder regardless of the outside cold. Used and endorsed by poultry experts and by experiment stations. Size, 3 x 5 ft.

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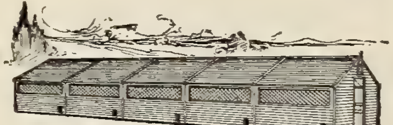
## 5 Section Poultry House



These are houses that will grow with your business. You can add additional sections at any time. A more sanitary or comfortable house could not be built. Made in 10 x 10 ft. sections, each fitted with roosts, nests, fountain and complete in every detail. Open fronts with canvas covered frames—far better than glass windows. Easily erected. One 10 ft. section $75. Additional sections $60 each.

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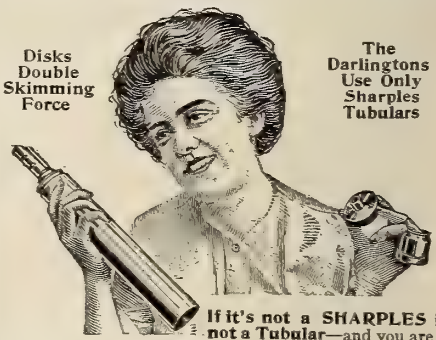
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The Darlingtons Use Only Sharples Tubulars

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Rich people, willing to waste money, may not use Tubulars, but those making fortunes at dairying do.

Write us now for Catalog 215. Learn how Dairy Tubulars make more money for you because they contain no disks and have double skimming force.

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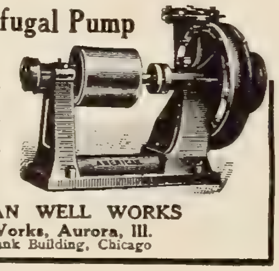

than by others because the impeller is accurately machined to the casing, preventing any sudden change in direction of the water. *Not an ounce* of power is wasted. Every "American" Centrifugal absolutely *guaranteed.*

Write for new *catalog* 120.

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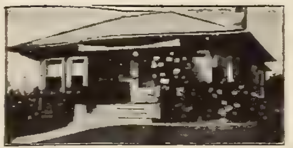

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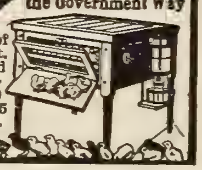

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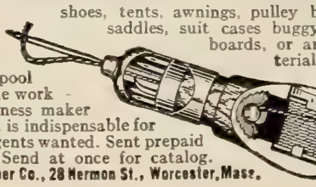

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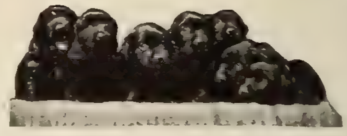

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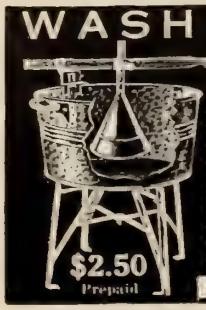

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# Country Life in America

Published February 15th

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# ·THE·TALK·OF·THE·OFFICE·

TWELVE YEARS OLD, 1900-1912

## LONG TERM SUBSCRIPTIONS AND WHY

A very good friend recently asked us, after prefacing his remarks with kindly apologies for making the inquiry, why we were willing to give such low rates for long term subscriptions for our magazines — did we need the money so badly that we were willing to offer so great a discount to get it.

The answer is this: We do not need the money, for our subscribers, the booksellers, and our friends the advertisers, supply us with sufficient to run this business effectively, with enough beside to afford us the comforts of life; but we do need help in extending the magazine's subscription list *among the kind of people we want.*

### CO-OPERATION AND ITS ECONOMIES

We should be afraid to tell our readers what it costs most periodicals to extend their lists of subscribers; the waste of printed matter and postage stamps is prodigious, and the scrap basket becomes the grave of many high hopes. Though we have never been "circulation plungers," our circulation department uses up more than $2,000 a week, and we could easily spend twice that amount with perhaps but a small increase in results.

It therefore occurred to us some years ago that perhaps our readers were as tired of receiving renewal notices as we were of sending them; they frequently delayed subscribing, missing numbers, etc., etc., because of forgetfulness or the inconvenience of writing and remitting; and we began to offer what we called long term subscriptions at prices low enough to make a real economy for the reader, and at terms satisfactory to us because of the money we saved on postage, stationery, and clerical labor. The plan was successful, and a large number of our subscribers now remit for two or three years at once.

This experience having showed us that our readers liked the idea has led us to

### A NEW STEP

which is really a co-operative idea—co-operation, as we understand it, being the distribution of a saving among those who help to save it.

For the first time, we offered in December, 1911, to split up these long term subscriptions, so that one year's subscription might be used as a renewal for one's own subscription, and one or two more given to a friend. Or another way by which the same purpose may be accomplished is by asking a friend or two to join with you in a long term subscription. This plan has also been successful, and we wish to continue and develop it; and your co-operation is suggested, because if half of our present subscribers took up and worked out this plan, they would save many thousands of dollars to our mutual advantage.

Consider the matter.

P. S. Our readers will readily see that we cannot afford to pay an agent commission on the plan — the reader, becomes his own agent, so to speak, and our dealings must be direct.

### ABOUT COUNTRY LIFE IN AMERICA

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We hope the readers of The Garden Magazine who do not know *Country Life in America* will add this beautiful and helpful magazine to their acquaintance. One year, $4; two years, $6; and three years, $8.00. If you will get two of your country loving friends to subscribe with you, the cost is very small and the joy of receiving it regularly, we think you will admit when you come to know the magazine, is very great.

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Best Breeds of Cattle, Best Breeds of Sheep, Best Breeds of Swine, Getting the Best of the Insects, etc.

Prize Contest for recipes: $20 in cash and other prizes.

#### PARTIAL LIST OF CONTENTS

Almanac, Calculation for 1912, with Calendar of Months, etc. Aid to the Injured, First. Alfalfa, How to Raise. Animal Diseases and their Remedies. Antidote for Poisons. Bee Keepers' Maxims. Bookkeeping for Farmers and Gardeners. Buildings, To Protect from Lightning. Builders, Information for. Bulb Culture — Indoor. Canning and Preserving. Clouds and the Weather. Concrete, What a Farmer Can Do With. Corn, How Deep to Plant; Planting for Big Crop; Practical Hints for Growing; Rule for Measuring; Selection of Seed. Cooking Time Tables. Eggs, How to Preserve. Farm Water Supply, The. Frosts, Facts About. Fruits, Best Varieties of for the United States; Pruning and Grafting. Greenhouse, Best All-round. Hotbed, Building a. Plants, Propagating at Home. Poultry, Who's Who In. Power for the Farm. Road Building and Maintenance. Seed, How to Test; When to Plant. Silo, How to Build a. Vegetables, Planting Tables for. Weights and Measures. Wheel Hoe and How to Use It. Woodlot, Care of.

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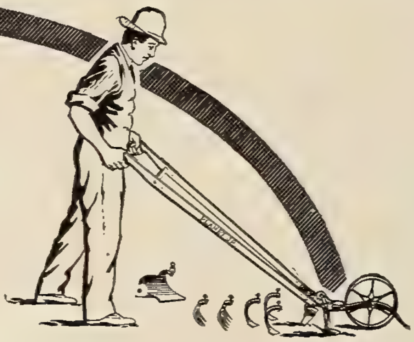

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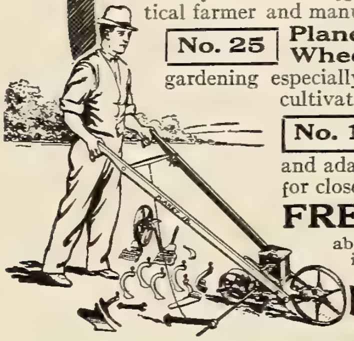

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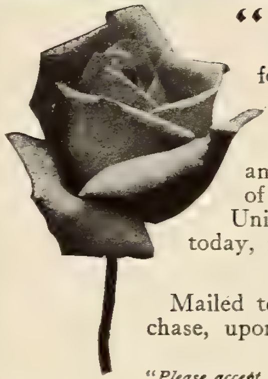

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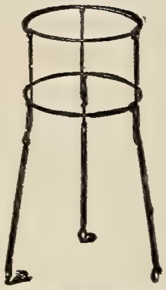

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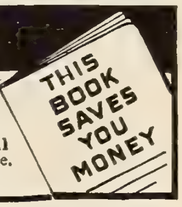
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Nov. 11 1910

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STRAWBERRY
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October 27, 1910.

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We are learning to take the finer, more enduring old gardens for our models, welcoming back to our borders the drifts of Snow-pinks, the gay Peonies and Hollyhocks, the sweet-breathed Day Lilies, the brilliant Poppies, the Larkspurs, the Phloxes, the Irises, and all the year's train of old-time hardy flowers. Yearly we find new uses for them, entirely within the bounds of real landscape art — for instance, the employment of pretty creeping plants to cover bare spots, rejected of the grasses, and the planting of tall perennials among trees and shrubs for life and color during the hot, dull days of midsummer.

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# The Garden Magazine

Vol. XV—No. 1
Published Monthly
FEBRUARY, 1912
One Dollar Fifty Cents a Year
Fifteen Cents a Copy

The MONTH'S
REMINDER

[For the purpose of reckoning dates, New York is generally taken as a standard. Allow six days' difference for every hundred miles of latitude.]

## How You Should not Make a Garden

THERE are two ways to go about having a garden. The first way involves a decision at the last minute — say in May, when you watch your neighbor set out his lettuce and cabbage seedlings and sow his peas and potatoes, and think that perhaps you better have a little garden truck of your own, after all. You hastily and superficially dig up a little ground, level it off a bit with a rake, run down to the grocery store and buy some seeds probably of the vintage of 1906, put up by a seed firm that no one ever heard of, being particular to order those kinds "that are cheap and that will come up quickly and not need much care." These you distribute in a half pulverized layer of nondescript soil and leave them to their own devices — giving your attention to "more important things" until the crop is ready to harvest. The chances are that the Millenium will come just about as soon as good returns from such a "garden." I imagine that is the way the Foolish Virgins would have gone about the task of making a garden, or the infinitely senseless family in the old German fairy tale, but it is a way of which any of us ought to be decidedly ashamed.

## And How You Should

NOW for the second way to make a garden — the true garden lover's way. It begins at once, if it has not already done so, by your ordering manure and spreading it on the ground whenever a mild, open spell comes along. A favorite question with garden makers is "How much manure shall I use?" The answer is simple and always holds good — use all you can get. On a plot 100 by 100 feet in size, twenty two-horse loads are not a bit too many. Of course the manure must be well worked in in such a case, the deeper the better. If it could have been spread in the fall before the ground was plowed, it should have been done, but don't waste time regretting that it wasn't. Get busy and work it into the soil as soon as you can.

Meanwhile you have planned the layout of the garden, the succession crops, the inter-cropping system, the most effective use of the hotbed, the amount of seed you will need and a host of similar details. If you have had gardens in past years, let every result be of assistance to you this season, combining practical experience with the tried and accepted rules, principles and theories; if you have never had a garden make the experiences of others, as recorded in the back files of The Garden Magazine, help you out.

The seed question ought to be a familiar one to you by now. The invariable precepts are: Buy standard varieties, from well-known and reliable seedsmen. Don't ask for the cheapest, but for the best. In the end the terms are synonymous.

Another point deserves mention. Of course the best place for a garden is in the back yard, just outside the door where you can potter around and yet be near the house. But what if you have no room between the back door and the back fence? Then borrow or rent a little space as close by as you can, and grow your vegetables there. If for any reason you doubt the economy of a garden, even though you have to pay for the land, read the article in the September 15th number of *Country Life in America* on Economy in the Vegetable Garden. Even the most conservative facts prove that you can raise more good things to eat than you can buy for the same amount of money.

The next most important question is that of tools. You will find the following very essential by March, so you had best begin to get them together right now.

Spade
Spading Fork
Wheelbarrow
Rake
Hoe
Trowel
Hose and Watering Pot
Row Marker
Dibble
Measuring Stick
Line
Wheel hoe and Seeder

Some will merely need cleaning up and sharpening; others will have to be bought new. And again, don't try to economize by getting cheap materials. Ten to one it will mean buying more before the season is half over.

Buy or make a lot of labels — one inch by nine or ten is a good size — and spend a few spare evenings writing on them the names of the varieties you are going to plant. Not only will this save valuable time later, but it will also serve to remind you of all the crops you are going to sow, and thus supplement your garden plan.

Make some flats, too, for starting seedlings. They involve only the very simplest carpentry work. But you are much less likely to pound your fingers these days than if you try to "knock some together" when you are in a hurry to use them.

You can buy ready made hotbeds if you are willing to pay generously for them. But there is no reason at all why you should not make these also. If you enjoy working with concrete make a permanent foundation. Otherwise all you need is some two-inch lumber and the ever-present shovel, hammer, saw and nails. Detailed plans for the construction of all these things can be obtained from back numbers of The Garden Magazine or direct from the Readers' Service at any time.

## Among the Permanent Garden Crops

DON'T lose sight of the necessity of spraying and pruning the fruit trees, rosebushes, grapevines, blackberries, raspberries and currants before the active work begins to crowd. The pruning should come first for two reasons: there will be less wood left to cover with spray after all the useless parts have been removed; and it will be easier to get into the centre of the bushes and trees and cover every inch of surface after they have been thinned out. If you have heard of San Jose scale in the neighborhood, don't rest till you know whether or not it has hit your plants. The fruits are most liable to attack and of course can be least spared; but roses are a favorite haunt of the pest and any of the ornamentals may need attention. Note carefully the directions for winter spraying given in the January, 1910, Garden Magazine.

Look for the scale first on the smooth bark of the young shoots. It shows more plainly there and anyway it finds a better feeding ground on the more tender tissues. A single scale looks like a dark gray fly-speck in the centre of a small area of reddish bark. A bad infestation makes the branch appear as if it were covered with a heavy coating of pepper and salt; and by rubbing the bark with a finger nail or a knife blade the dry flaky incrustation of scale shells can be removed and proven to be the genuine San Jose. The oyster shell scale is several times larger, of about the same color, and is so true to its name that it needs no other description.

# Growing High Quality Sweet Peas — By G. W. Kerr, Pennsylvania

A PRACTICAL EXPLANATION BY A LEADING EXPERT, ESPECIALLY FOR THE AMATEUR — THE PRIME IMPORTANCE OF GETTING A PROPER AND EARLY START — QUALITY VARIETIES FOR THE HOME GARDEN

THE whole practice of sweet pea growing may be put concisely into these very few words: Have the ground deeply trenched and liberally manured, the plants thinned and staked; do not allow a seed pod to form; give copious watering, changing the liquid manure diet at each application; keep the hoe going regularly.

### A GOOD BEGINNING

An early start is the great secret of success with sweet peas, for unless the seed is got into the soil early the plants do not really thrive, unless the season is exceptional; and even then the results would have been much better if early planting had been done. For the latitude of Philadelphia early planting means as early in March as soil conditions will allow. It is not well to plant while the ground is wet and soggy, but I would rather get the seed into the soil even should it be on the wet side than perhaps have to delay until well into April, waiting for ideal conditions, for never will sweet peas give first class results if planted after the middle of April. They may make abundant growth and even produce buds in plenty but fine flowers are invariably conspicuously absent. Allow me to state here that I decidedly prefer fall planting, but that of course is out of the question at this date.

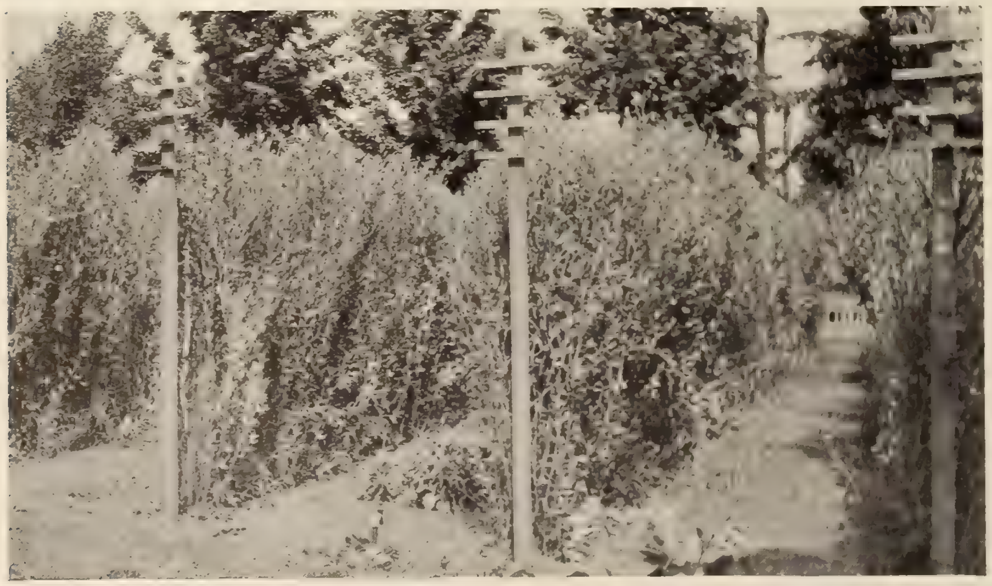
If the ground was not prepared in the fall it must get attention now, at once, just as soon as the frost is out of the land, and it is dry enough to work nicely. Good results with sweet peas may be obtained by cultivating as for any ordinary garden crop, but if you want (and surely you do) the "best ever" — flowers that will be the envy of your neighborhood — a little special preparation is necessary.

Select by preference a spot where the vines will have plenty of light and air, on no account under trees, or where branches will overhang the plants; though a position where trees or buildings at some distance will shade the plants from the mid-day and early afternoon sun, is ideal.

### MAKING ALL FIT

Trench the ground eighteen inches to two feet deep, and two feet wide where the row will run. Should the bottom soil be poor it must not be brought to the top, but improved by turning it over in the bottom of the trench and incorporating with it rather long strawy manure, or the roughest material of the compost heap, or garden refuse — in fact anything that will lend humus and tend to sweeten it. Over this bottom spit put a layer of well rotted manure (cow manure for preference), cover with three inches of soil, giving this layer a dressing of fine bone meal at the rate of two ounces per yard run of the row. On top of that add two inches of soil, and then another layer of well rotted manure, afterward levelling up the trench incorporating with the top spit freshly slaked lime at the rate of four ounces per yard. Let each layer of manure be three inches thick. Just previous to planting rake into the top of the trench, along the centre where the seed will be sown, some acid phosphate, at the rate of two ounces per yard run of row. Consolidate the ground by rolling or treading and you are ready for planting.

Plant the seed about two inches deep — not less. One ounce is sufficient for fifteen feet run of row; but when planting new and expensive varieties plant the individual seeds from one to two inches apart. If several rows are being planted let them be at least five feet apart.



Give ample space between the rows — five feet. Note how the vines spread outward at the top

It often happens that after a few fine genial days in March (during which we get our seed planted) a very cold and damp spell of weather sets in with the result that the seed instead of swelling, rots in the ground, the worst sufferers being the white seeded and some of the lavender and blue flowered varieties. This can be guarded against very easily by the old fashioned trick of soaking the seed, before sowing, in tepid water for twelve hours or so. This treatment hurries germination, and if the seed once sends forth the little embryo plant there is not much danger of things going wrong subsequently, no matter how cold and inclement the weather may be.

### SOWING IN POTS

There is still another and better plan for starting sweet peas in the early spring — sowing in pots. It is the one method for the man who wants superlative results, but it means more work, which however is amply repaid by superior growth. I have employed this method extensively for a number of years — in fact all choice novelties, advance trials and crosses are planted in pots, my method being — according to the scarcity of the variety — to plant from two to five seeds in a three and a half or four inch pot, using soil that is not too tenacious or heavy. Fill the pot to one inch from the top with soil, making it fairly firm but not hard, plant the seeds at equal distances and cover with half an inch of soil thus allowing half an inch for watering. Place labels in each pot so that there may be no mixing of the varieties when planting out. The best date for sowing in pots being the latter part of February.

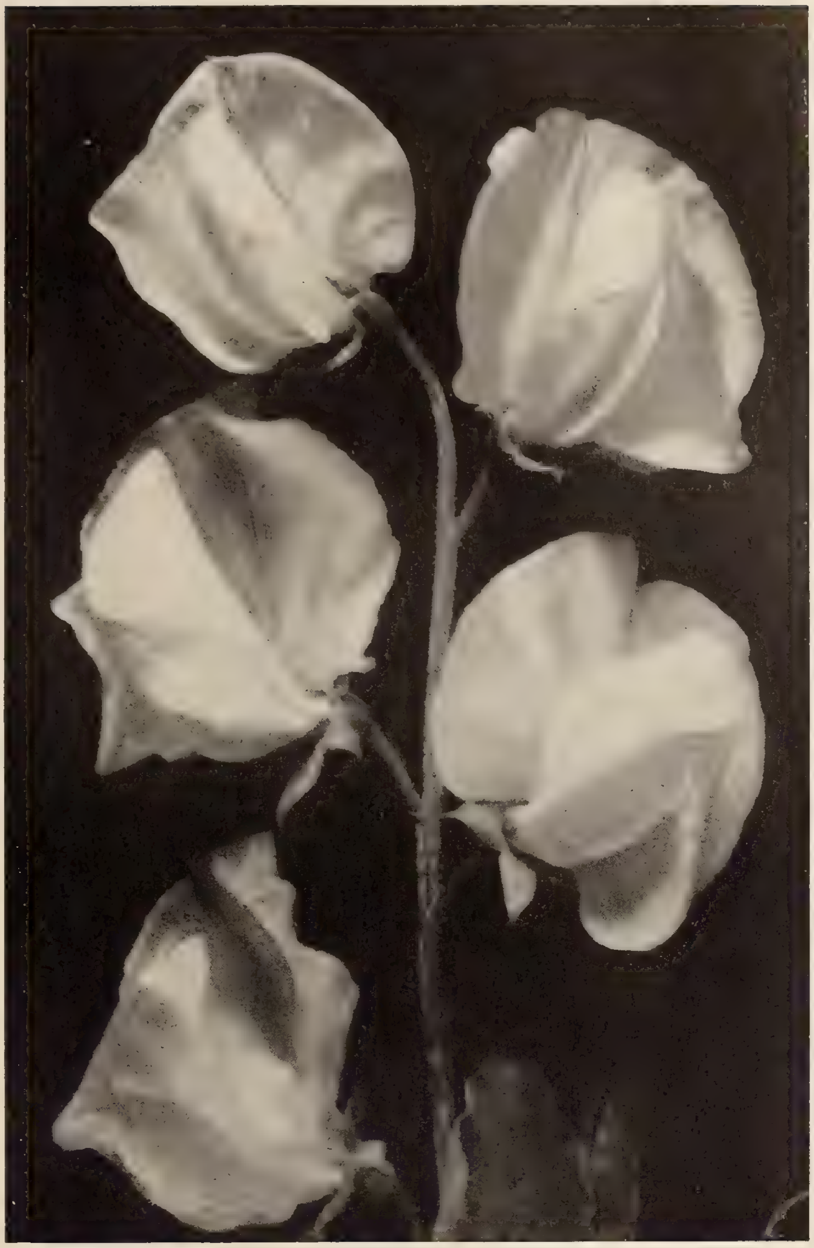
The pots must be placed in a cool greenhouse or coldframe, the former for preference. Do not over water but at the same time the soil must be kept moist to encourage germination. Much artificial heat must be avoided, and if the pots are in a greenhouse the heat should range from 40° at night to 50° during the day. Too great a heat is bad resulting in weak and spindly growth, instead of dwarf and sturdy. Wherever weather conditions will allow the seedlings must have lots of air night and day. When about two inches high the pots should be removed to a coldframe inserting short brush in the pots that the vines may have support and so induce upright growth. Take off the sashes completely during the day in favorable weather, and give a little air at night unless the weather should be very severe, the idea being to make the plants perfectly hardy before planting out, which means that they must be so hardened that they may be left entirely uncovered for a few days previous.

I endeavor to have the plants set out by the middle of April at least, according to weather conditions, and if the plants have been carefully hardened off, it takes very severe weather indeed to harm them at all.

Place the pots twelve to eighteen inches apart in the row, planting each potful entire, and if they were given a thorough watering the day before, it will be a simple matter to turn the ball of earth out of the pot without disturbing the roots. Plant firmly and if necessary give the plants a thorough watering to settle the soil about the roots.

### SUPPORT FOR THE VINES

Whatever may be the medium for supporting the vines, it should be put into place immediately after planting. Where good stout twiggy brush can be had don't think about anything else, as no other support will give such good results and the sweet pea vine appears to be in its element when rambling over it. If the stakes used are not well feathered at the bottom, some smaller pieces may be inserted, to give the young vines something to cling to as soon as they start growing. Insert the sticks firmly in the ground on each side of the row, six inches from the plants, the tops slanting slightly from the plants (on no account meeting at the top like an inverted V) as the bulk of the sweet pea growth is at flowering time at the top of the vine. Failing brush as a support, the best substitute is wire netting, six inch mesh, attaching it to stout stakes driven about twelve inches into the ground, wiring both sides of the row at the distance recommended for brush. Another method is the use of soft jute twine, run to stakes inserted five feet apart on each side of the sweet peas, the twine running horizontally from stake to stake, allowing six inches between each line of twine.


The modern "Spencer" or "orchid-flowered" sweet peas have waved standards, and are much larger than the old type. This photograph is actual size

### THINNING OUT

It pays to thin out the rows just previous to staking because the quantity of seed given for sowing in the space is to allow for all sorts of peculiar accidents. The vines should be thinned out to stand from four to six inches apart, afterward drawing the soil up to them on either side so that they appear to be growing along the centre of a small furrow. The soil thus brought around the plants tends to keep them in an upright position and also replaces such soil as may have become loosened during the thinning. But even when no thinning out is required, I always draw the soil up to the young vines when they are about three inches high. The seedlings which are thinned out may be used to fill up any blanks.

Sweet peas need not necessarily be planted in rows, as, for the embellishment of the flower garden, they can be used with fine effect when planted in clumps at the back of a herbaceous border, or where there are recesses among shrubs.

Do not rest on your oars now waiting on the flowers to open, but keep the hoe going at least once a week (twice would be better) between the rows and well up to the plants, and should the weather be dry and mild, copious watering (according to soil conditions) will be most beneficial. Always use the hoe after watering, as soon as the surface soil drys off, to make a soil mulch, to keep off the drying influence of the sun's rays.

### MULCHING AND FEEDING

When the buds show color a mulch of half decayed farmyard manure — two to three inches thick — will be relished by the plants; failing manure, hay or lawn clippings may be employed, but they do not contain the manurial properties of the former. And remember to see that the soil is stirred just before the mulch is given.

The plants will now be coming into full flower — I can imagine I see their glorious colors, and inhale their subtle, thrilling fragrance — and as our Queen of Annuals provides a bountiful harvest, do not cull with a niggardly hand, but cut for the house and for your friends, remembering that the more freely the blossoms are culled the longer and more profusely will the plants continue to yield their best. On no account let a seed pod form (a friend of mine has remarked that "a seed pod should be as a needle in a haystack—undiscoverable"), for when the vines once begin to set seed their flowering season soon passes.

While the plants are flowering, it is well to keep them fed with liquid fertilizer. Liquid manure may be applied in many forms, one of the best being soot water (Scotch soot) putting a small bag — seven pounds or so — in a barrel of water, and applying when it is the color of weak tea; sulphate of potash, one ounce to a gallon of water; sulphate of ammonia 1 ounce to two gallons of water; acid phosphate 1 ounce to a gallon of water; also liquid farmyard manure; any of the above applied once a week will work wonders. But they should never be applied when the ground is dry; let the manure follow a thorough soaking with clear water, or after showers. Dry soot might also be dusted along the roots of the plants during showery weather, this manure acting as a perfect fertilizer, giving great brightness and color to the flowers, and also as an insecticide.

### AS TO WATERING

If the hose will reach your sweet peas use it freely each evening, or at least two or three times a week during hot, dry weather; and if it has a spray attachment to not forget an overhead bath after the sun has gone down refreshes the vines most wonderfully and also tends to keep them free from aphis.

# Choosing Fruits for the Home Garden — By W. C. McCollom, New York

AN EFFORT TO REALLY AID EACH AMATEUR IN CHOOSING VARIETIES THAT WILL FILL HIS PECULIAR NEEDS — AN ENUMERATION OF THOSE THAT ARE OF PROVEN MERIT AND SAFE TO PLANT

IF WE are to plant out any fruit trees this spring we must get down to business now in making selections of varieties to suit our special needs. It surely is worth a little careful thought, for the planting of a fruit tree is an investment for years. Too little attention is given to the discussion of the merits of different varieties; for as was said last month, it is not and cannot be absolute — individual preferences count for much; still in the lists offered by the nurserymen are always many well-tried kinds that have stood the test of time and are adapted to a wide region. My selections following are made from such. I do not refer to any new, as yet untried, ones simply because I do not believe in recommending such things to others. If a perfectly reliable nurseryman were introducing a new variety, I would not hesitate to try it for myself, but I would not recommend it to others until I found it was really an acquisition. For every good new variety there are twenty introduced that are no real improvement over what we have.

This apricot tree, in a New York City back yard, gives an abundance of luscious fruits every year

Be explicit in ordering your stock; state carefully exactly what you want. Apples are grafted on "seedling" stock. That is, the nurseryman buys seeds from a cider mill, sows them, and when large enough he uses the plants as the stocks upon which he grafts his salable varieties. These seedlings are all right for ordinary standard trees, but if you want dwarf trees get them on "Paradise" stock. This dwarfs it, and the stock is much hardier than the Doucin stock, which is also used to dwarf apples. Pears are budded. If you want dwarf pears get them on the quince. Peaches and nectarines are budded; but for dwarfs they should be grafted on the cherry plum stock.

Cherries are dwarfed by working them on the cherry plum stock. For open orchard work they should be worked on the Mahaleb or Mazzard stock. Plums and apricots should be on the Myrobolan stock if dwarfs.

Now as to actual varieties. The most important fruits are apples. We want, if there be room, several of the early sorts. These are: Sweet Bough, yellow and Red Astrachan; but while both are good varieties of this type, they are very little earlier than Duchess of Oldenburg, a prolific bearer of good size and first quality fruit. If your space is limited and you do not have room for all three varieties, plant Duchess. Good fall apples are Fall Pippin, a beautiful large, yellow; and Gravenstein, a red apple of exceptional quality but having one bad fault of dropping the fruit too early. A little later are Alexander and Beauty of Kent, of even better quality. Alexander is a pinkish red, good sized apple, one of the choicest of apples; Beauty of Kent though larger and of about the same quality, is not nearly so handsome.

In late varieties, Baldwin ranks high in several essentials. It produces large crops and is a good keeper. Ben Davis, another good keeper, is the prettiest apple we have, in my estimation, and the quality is fairly good on a light soil. Newtown Pippin still holds the lead, as a high quality late keeper, but Rhode Island Greening is the best keeping green apple to date. Roxbury Rust is the best russet apple and keeps very late indeed. Twenty Ounce is one of the extra large apples which is not lacking in quality. Fallawater and Beitigheimer belong to this class, but are of lower quality.

When well grown, Northern Spy is perhaps the best all around apple, but it is fastidious about soils, requiring a deep, heavy loam. It certainly will not do well on sandy soils, where however Bismarck, larger than Northern Spy and almost of the same high quality, does quite well. As dwarfs either for training or for open field work, Bismarck, Beauty of Kent, Emperor and Alexander are all good apples.

The best early pears are Clapp's Favorite and Bartlett. While these are not of recent introduction, there are no new varieties that even approach them in their respective classes. Clapp's Favorite is a large fruit of beautiful color — yellowish green with slight red markings — and a better eating pear would be hard to find. Bartlett is too well known to need describing; it is of the best quality and most prolific. It will certainly outbear Clapp's Favorite.

In late pears Buerre d' Anjou should be your first selection. It is not what might be called a pretty pear, but when ripe, is excellent for the table, having a very distinct flavor, the tree is a good bearer and the pears are extra large. Sheldon ranks high as a table pear; the fruit is of fair size, brownish, of good shape and a very good flavor. Duchess d' Angouleme should be given third choice. It is a good all-round late pear, but lacks really distinctive quality. Seckel stands alone — it is so different from any other pear and might suffer by comparison because of its small size, but it should have a place in every garden as it is a certain bearer. The Worden Seckel is much larger than the old-fashioned Seckel and is supposed to be of just as good quality, but in my experience it is not quite up to the standard of the old variety; perhaps it behaves better in other soils than it does in mine (a light soil).

Lawrence is the best late pear; it will keep until well into the winter, it is a good cropper and the fruit is of a good quality.

In some odd corner plant one crab apple, a fruit deserving more attention, as there is no jelly quite up to the standard of that made from crab apples. The tree is easily grown and produces freely. The best variety is Transcendant, a beautiful yellow. Yellow and Red Siberian are also good varieties.

The quince does well almost anywhere, and under almost any conditions. In fact, some people seem to think that the quince thrives on neglect; it will do better than almost any other tree under adverse conditions, but it will repay good care. Quinces make the finest of jelly and they are delicious when baked or boiled and excellent for making marmalade. The best all-around variety is Champion, a strong grower with very large fruits of good quality. Other good varieties are Meech's Prolific and Rhea's Mammoth.

Plant peaches because they give good returns so soon. The trees fruit fairly well the third season from planting,

Peaches can be grown almost anywhere if the care be given. The soil must be enriched from time to time, as the trees are rank growers and heavy feeders. Ten years ago the farmers on Long Island used to sigh and think of the fine peaches they grew years before but couldn't produce any more. Some young man with up-to-date ideas commenced growing peaches. and the peaches produced from the middle Island section for the last few years have been up to the highest standard of quality.

Early and Late Crawford are both good varieties. Elberta is another valuable variety, very similar to Crawfords and if anything a trifle better; the fruit is round while the Crawfords are slightly oblong. One of the largest peaches is the Globe, which possesses quality as well as size. Another excellent yellow-fleshed peach is the Crosby. This is really the best yellow peach in my experience. I place the yellow-fleshed varieties thus: Crosby, Elberta, Early Crawford, Late Crawford and Globe.

The best white-fleshed peaches are Alexander, a medium sized fruit of excellent quality: Stump the World, very large; Mountain Rose, the prettiest fruit of the white-fleshed type; and Champion.

Nectarines are merely bald peaches, but are weaker and when grown out of doors are very subject to all the ailments that happen their family, such as curculio, but if grown along a garden wall or in some very sheltered place they can be grown satisfactorily. The best varieties for outdoor culture are Boston, Lord Napier and Victoria. This last is really the best variety but needs the most protection.

If you can afford the space and are not north of New York try one of the apricots. To be sure it will not grow as well here as in California, but it can be successfully grown here; and picked ripe from the tree the fruit is very delicious. Plant in a sheltered place and a good rich soil. For early, Alexander and Early Golden; late, Harris and Moorpark.

There is no more prolific tree than the plum and the fruit can be used for many purposes other than as a table fruit. The trees are strong growers and outside of serving as a prey for the San Jose scale, a condition easily relieved by spraying, the trees give no trouble after planting. And moreover you don't plant only for your children; as the trees bear in three to four years. It is peculiar that the Japanese varieties seem to do better than our own and the European varieties. I do not say that the quality is any better.

Abundance is one of the best of the Japanese varieties, a free bearer and a trifle earlier than the general plum crop. Burbank is one of the largest fruited varieties. October Purple is the best late variety. Other good ones are Wickson, a remarkably good colored plum, carmine red; Satsuma a handsome dark fleshed sort like a beet. Among the others my first choice would be Green Gage, not a large plum, but when well grown and thoroughly ripe, it is very juicy and of spicy flavor. Imperial Gage is a larger-fruited variety but not so luscious. Bradshaw is an old standby of the red type, and German Prune is a good dark-colored sort.

Raspberries and blackcaps from the home garden have a lusciousness otherwise impossible

Home grown fruits of all kinds can be fully ripened on the trees and gathered in the very best condition

Cherries are grouped into two classes — the sweet cherry; and the cooking, or sour, cherry. Cherry trees are all good subjects as shade trees and are highly ornamental in the landscape, besides serving as bearers of delicious fruit.

Of the sweet cherries, the black varieties are the highest-flavored, and as a table fruit they excel. Black Tartarian is one of the best; Schmidt's Bigarreau is another good sort; Mercer is a good dark red cherry; Rockport Bigarreau and Governor Wood are both light red varieties with little to choose between them. Coe's Transparent is a very large light red; handsome, very meaty, but not quite so luscious as some of the others. Slikeman and Downer's Late Red are both worth consideration on account of their lateness; the former is the latest cherry we have; both are of good quality.

Of the sour cherries Early Richmond, dark red, one of the best, is very productive. Montmorency is about ten days later than Richmond and the fruit is larger. Other good sorts are English Morello, very dark-colored, and Late Duke, a good late variety.

Grapes are used for more purposes than any other fruit, and there are few small country or suburban homes that do not boast of grape arbors.

Of the black grapes, the comparatively new Campbell Early is the best all-around variety we have, with Concord a close second. Worden should have third place. Of the red varieties I place Regal first, the old Catawba holding second place, and Brighton third. In white grapes I like Niagara, but Green Mountain (much earlier) presses pretty hard, while Moore's Diamond deserves third place.

Any place large enough and which can afford the space should have a persimmon tree. Nothing is more delicious than a persimmon after the frost has ripened it. But if you taste it before it starts to shrivel, (which the fruit does as soon as the frost strikes), it will take some time to get your mouth straightened out. The native American is the best to plant.

Another good fruit not highly prized is the mulberry. But do not plant it near any other fruit, as it is a heavy feeder and soon robs the soil. Downing's Everbearing is the one variety to grow. Sweet fruits are an essential about the home, and especially for preserving and jellying. Of them all the currant leads in general utility. It is easy to grow and very productive. In red varieties I consider Perfection far the best, with Fay's Prolific second. White Grape is the best white variety. Of the black varieties Black Naples takes first place for quality, with Black Champion second.

Most people have a poor opinion of blackberries, simply because they do not know what a real blackberry is. When not well grown the blackberry is but the poorest imitation of a fruit, being all seeds and with no flavor. But given good soil — and then! Ah! Wilson's Early, is a good sweet berry, though not as large as some of the others. For main crop I see very little difference between Taylor, Rathburn and Kittatinny. All are good varieties and any one of the three can be depended upon. For cropping Snyder will outclass any of them, but the berries are small.

Some people seem afraid to grow gooseberries because they are subject to mildew, but there are cures for mildew. The gooseberry is a good table fruit besides being excellent for preserving. The English varieties, as table fruits, clearly outclass the American varieties, the berry being much larger and of a superior quality. The only thing preventing their superceding our own varieties is that they are more susceptible to mildew.

The best varieties of the English type are: Crown Bob, a good red of extra quality; Whitesmith, the best white; but the champion of all is Industry, a big dark red fruit, the berries being as large as our plums. All these varieties are covered with long, soft spines which not only add to their appearance but are a sure criterion of quality. Of the American varieties Downing is easily the best. This is a wonderful cropper and the fruit is of a fair size and good quality. Columbus would be my second choice and Smith's Improved third.

For profitable returns for time and money spent I think no fruit equals the raspberry. Its requirements are simple and when once planted you can have raspberries indefinitely. Of the red-fruited varieties Cuthbert still looks best, and is very productive. The new variety, King, may be fully as good and in some locations may do better, but with me it was not as productive and the plants were smaller. The third place I would give to Miller's Red, and I would surely plant a few of the new St. Regis, an ever-bearing variety which lives up to its reputation, bearing quite freely right up to frost. In yellow varieties there is no other yellow to approach Golden Queen. In the black caps Gregg a good sized berry of high quality comes first. Cumberland is very hardy and productive. Schaffer is the best flavored, though the berries are rather small. The Lucretia dewberry or trailing blackberry is worth a trial, for the fruit is of a good quality and though not up to the standard of the cane varieties, the plant does well in very dry situations where the cane blackberry suffers from sun scald.

With strawberries location seems to have a wonderful effect on the size and quality of the various varieties. A variety that is first class on Long Island may not live up to that same standard in New Jersey. I do not mean that an inferior variety in one place would do better than a good variety in another. A good variety is good from New York to San Francisco, but while Marshall might reach its highest state of perfection around New York, Climax or some other good berry may be a little better at San Francisco. The wise one selects strawberries according to local experience. There is no more to be said beyond endorsing the following as most generally adaptable:

Excelsior, Glen Mary, Marshall, Sample, Climax, New York, the Hunn and Parker Earle. The curious persons will undoubtedly want to try some of the fall fruiting varieties which yield crops in October and November.

Dwarf trained fruit trees are most serviceable for very small gardens: they occupy practically no space at all and are quite picturesque

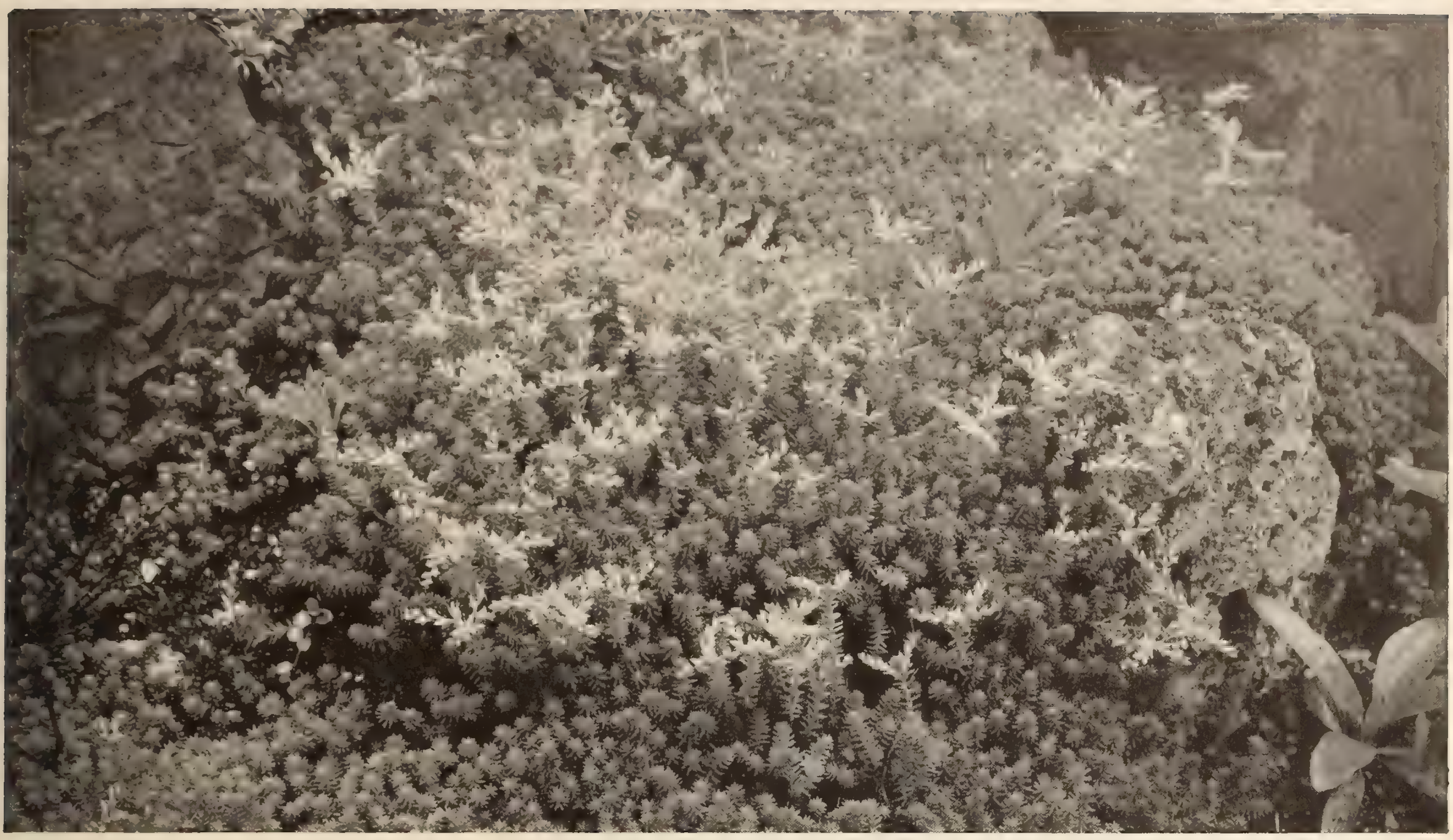
## A Little Planting for February

IT IS full time to think about planting, even though a blizzard may be howling outside the window this very minute. Some cabbage, celery, lettuce and radishes may be sown in flats to be transplanted into the hotbed or coldframe as soon as it is ready. So, too, some of the hardier ornamentals may be started in the same way. Try sowing cosmos, sweet peas, dianthus, pansies, gaillardia, calliopsis salpiglossis, and *Phlox Drummondi* in flats; and also the ornamental grasses and some of the tender annual vines such as the cypress vine, (*Ipomœa Quamoclit*), the butterfly runner (*Phaseolus multiflorus* var. *papilio*), the Allegheny vine (*Adlumia cirrhosa*), the cup-and-saucer vine (*Cobœa scandens*) and the canary-bird flower (*Tropœolum peregrinum*).

Most people want lots of flowers in their garden. The trouble is that there are two ways of getting them and a good many persons choose the wrong way. By all means plant all the varieties you can afford to buy, whether you know what sort of blossoms you are going to get or not. *But* put the strangers and the sorts that you are growing for cut flowers somewhere where they will not clash with the real garden scheme, or leave it desolate when they are gathered for decorating the house. In other words, use the plants you are familiar with for your color schemes, perennial borders etc., and have a little experimental plot for trying out new species and varieties of doubtful color properties.

Tighten up the wires on the grape trellis and anywhere else that they are used. A simple support for the cane fruits will prove a tremendous advantage at picking time, and when you have to cultivate, too. One way is to sink a strong post at each end of the row, nail a crosspiece to it and attach wires to the arms of the crosspiece far enough apart so that the canes can grow up between them and rest on them. Some growers advise the use of spring coil wire which retains its tightness in all kinds of weather. If there is no necessity for shifting the trellises, iron posts will prove economical in the long run. But good locust posts, if treated with some preservative when set, will last from thirty to fifty years which is ordinarily long enough to satisfy any one. Any form of creosote or tar will serve this purpose.

Don't forget to brace the end post of any fence or trellis.



The six-angled stonecrop (*S. sexangulare*), showing the soft cushiony foliage and yellow flowers. An example of the terete, or cylindrical-leaved group

# The "Fun" of Collecting Stonecrops, II — By Wilhelm Miller, New York

### MOSSY, EVERGREEN PLANTS THAT ANY ONE CAN GROW IN ANY SOIL — INVALUABLE FOR EDGING PATHS, CARPETING ROSEBEDS, ROCK GARDENS, WALLS, SANDY SOIL, AND FOR WINTER BEAUTY

WHEN I wrote Sedum for Bailey's "Cyclopedia of American Horticulture" in 1900, I knew as much about stonecrops as a blind man knows about color. Witness this banal bit of sophomoric humor; "Sedums are plants for poor folks. The chief points against them are that they have never been fashionable and anybody can grow them." It is true that sedums are cheap, that any one can grow them, and that you sometimes see a tin can filled with *Sedum acre* in a tenement window. But fashionable! There is not a king in Europe who does not have sedums in his garden. The list of beauties I saw in England is so long that it makes my head ache to think of the miserable thirty-nine species I formerly described from Masters' respectable monograph and from the most unimpeachable dead plants!

The standard works on gardening describe faithfully everything that is unimportant about sedums and are absolutely dumb about their peculiar beauties and roses. There are three main types of beauty in the genus — the robust, creeping and mossy — the first two of which were treated last month in THE GARDEN MAGAZINE.

The mossy sedums grow only one to four inches high, have diminutive flowers between May and July, and make exquisite carpets of evergreen foliage which is particularly attractive in winter, when some of them take on bronze tones. These are the ones which I should like to put in every garden in the land, because they can destroy more ugliness and create more beauty than any plants of their size I know. And, in particular they can perform four great services for America.

1. *They can turn great stretches of sand and rock into carpets of living beauty.* For example, the wall pepper, will grow in the poorest soil, even gravel, or on rocky land where there is hardly an inch of earth. In June and July it will give great patches of yellow flowers. And in the winter it will cover naked and ugly wastes with an evergreen carpet, which is most comforting to the eye for three or four months when the grass is dead.

2. *They will carpet rose and bulb beds,* furnishing a better background for the flowers than dirt, and more winter beauty than manure or litter. They are so shallow-rooted that they do not rob the other flowers of much plant food or moisture. Fancy your daffodils rising out of an evergreen carpet in spring! Imagine the bulb beds beneath your window clothed with a living green turf instead of dead yellow straw! And how much better your rose beds would look at all times of the year!

3. *They will solve the great problem of the American rock garden.* There are thousands of lovely rock gardens in England; why are there none here? Because our summer climate is hot and dry. Yet these sedums have been adapted by nature to endure just such conditions. They will grow in a pinch of soil on rocks that are so hot you can hardly touch your hand to them. Moreover these sedums do not look like cacti and other desert plants — thin and scraggly or else gross and pulpy. They have the genuine alpine charm.

4. *They will remove some of the new look from gardens,* and give in one year some of the mellowness which age alone is supposed to bring. You can plant sedums in the stone steps that descend to the garden, in the brick walks, in low retaining walls built without mortar, and on the top of the garden wall, where a brick may be left out of the inner row occasionally for the purpose of crowning the wall with flowers. In a climate like ours, that is not favorable to lichens and mosses, how much it means to be able to place the finishing touch that softens

masonry, hides bareness, and reconciles the environment to a new garden!

The mossy sedums can be divided into three groups, the yellow-flowered, white, and pinkish. The first three species have yellow flowers.

### WALL PEPPER OR BITING STONECROP

The commonest of all the stonecrops is the wall pepper or biting stonecrop (*S. acre*), so called because of the acrid taste of the leaves. (See page 17). This is the one that makes enchanting patches of yellow on the thatched roofs of English cottages. I have seen brick walls crowned with it for nearly a quarter of a mile, as it is a common practice to leave out the central row of bricks on the top of a garden wall in order to establish this and other flowers that have a genius for growing in a pinch of soil. In America it has escaped from cultivation and often makes a pretty picture in neglected cemeteries. This is undoubtedly the best species for naturalizing on a large scale, because it is the cheapest and spreads the quickest, sowing its own seed freely, like a wild flower. Large clumps cost about six cents each, by the hundred. I advise every beginner to get a few plants of wall pepper and, if he likes it, work up a large stock of it — enough to cover a rose bed, or a bulb bed, or to edge a garden path. A ten-cent packet of seeds will do wonders. Or you can simply break off the little stems, stick them in the ground, and they will grow as happily as geranium slips in a bench of silver sand.

The carpet bedding fraternity affect a "golden moss" (var. aureum), which has showier tips in spring, the abnormal color disappearing with the summer heat. They consider the silvery-leaved form (var. elegans) less effective. The only variety that interests a collector is var. majus, which has flowers about three quarters of an inch across arranged in a two-sided cyme, whereas the ordinary type has flowers about half an inch across in one-sided cymes.

The English stonecrop (*S. Anglicum*), one of the prettiest of the white-flowered species, sometimes tinted rose

A quaint old name for the wall pepper is "love entangle." The plant grows two or three inches high, blooms in July, and has foliage of a cheerful light green. The leaves are only a quarter of an inch long and look like little pickles. As a carpet it has a rougher and harder texture than the others, but this is not objectionable.

The blue stonecrop (*S. caeruleum*), an annual, is the only one of its color among the mossy or carpeting kinds

### THE SIX-ROWED STONECROP

The six-rowed stonecrop (*S. sexangulare*), is very close to the wall pepper, according to the books, but in real life it has a wholly different expression as you may see by the picture — softer in texture and a darker green. I first fell in love with this at Gravetye, where I saw it carpeting rose beds in William Robinson's revolutionary rose garden. It was not in flower, but the reddish cast of the new growth was charming. These passing spring colors have no botanical value and never get into the books but they are the joy of the gardener who lives with his plants. The leaves of these plants are, fortunately, tasteless, but before you venture on a taste, see if they are in six or seven rows instead of five, and oblong rather than ovoid.

### REFLEXED STONECROP OR STONE ORPINE

The reflexed stonecrop or stone orpine (*S. reflexum*), is the only one I know with leaves bent back, instead of being held forward or at right angles. The whole effect is that of some rich woodland moss growing eight or ten inches high with soft linear leaves about three quarters of an inch long. These leaves are sharp at the apex, while the other two yellow-flowered species have blunt leaves. I have not seen the silvery, glaucous, and dwarf forms (vars. albescens, glaucum and minor). Bluish, whitish and golden-leaved varieties are to be expected throughout the genus.

*Sedum rupestre*, a British species, bears rosettes of leaves at the tips of its barren, trailing stems

### A FOURTH YELLOW-FLOWERED STONECROP

*Sedum rupestre*, pictured above, differs from all the mossy stonecrops, so far as I know, by its extraordinarily long flower stems which look somewhat floppy and gawky in the picture. The houseleeks, also, often have sprawling stems and there is a *Sempervivum rupestre*, with which our plant should not be confused. Robinson says that *Sedum rupestre* and *reflexum* are worth naturalizing on walls and ruins, along paths, and on the less important surfaces of the rock garden. Unlike the other yellow-flowered species *S. rupestre* bears its flowers in flat clusters or corymbs.

### THREE WHITE-FLOWERED STONECROPS

We now come to three white-flowered species, the most exquisite of which is dubbed "worm grass"—*Sedum album*. "Absolutely beautiful" I should call it, if I did not know that beauty is entirely subjective. As a carpeting plant it seemed to me one of the most refined in Mr. Robinson's garden, though not very distinctive when out of bloom. But the bloom of it is so airy, and lace-like that I fell in love with it when it flowered in my own garden. The blossoms are only half an inch across, and the reddish anthers add to the daintiness. It grows about three inches high and blooms in June. This plant is really quite inexpensive — a thousand can be bought for about ten dollars.

*Sedum Monregalense* or *cruciatum* is supposed to have flowers only a quarter of an inch across or half the size of *S. album*, but the plant I bought under this name had flowers twice as large as those of album. The only distinction between the two species that I could get out of the books is a very slender one, the buds of album being oblong and those of Monregalense roundish. The plant which I bought for Monregalense had larger but fewer flowers than album, and I liked better the delicacy and grace of album.

The English stonecrop (*S. Anglicum*), was not advertised for sale in America in 1900 and therefore I did not account for it in Bailey's Cyclopedia. According to a prominent dealer in alpines at Rochester, N. Y., it has pure white flowers which are sometimes tinted with rose. It is said to grow three or four inches high and blooms in June or July. The plant which I bought under this name turned out to be a yellow-flowered species, so I cannot say whether it has distinctive beauty or not.

### THE PINKISH OR PURPLISH GROUP

We now come to four species that normally exhibit some pink or purple in their flowers, and of these the most highly colored is the bird's foot stonecrop (*S. pulchellum*), so named because the flowers are borne on several recurved or spreading branches which suggested to someone a bird's claws. Some nurserymen describe the color as bright rosy purple; others call it lilac. In winter the foliage takes on fine shades of red or brown. There can be no doubt about this plant being adapted to our climate for it is native to the United States. Barr calls it "a lovely rock plant." It differs from the three species I am to describe next in having green foliage, with the apex of each leaf sharp, not blunt.

### THREE WITH BLUISH LEAVES

There is something peculiarly exciting about plants with bluish or gray leaves. I grew fifty species of Sedum for two years, and the one plant which every visitor picked out as the most beautiful was *S. glaucum*, a name which you will search the Cyclopedia for in vain. Yet it answers very nicely the description I wrote for *S. Hispanicum*, and I shall therefore call it the Spanish stonecrop. It is a minute gray-green plant scarcely an inch high, indescribably soft, dense and charming, while the color of the foliage is positively unique — so much so that this plant has been taken up by the carpet bedding people. However, I do not believe they will spoil it, because Siebold's stonecrop gives more color for the money. These inch-high plants are too precious to entrust to the ordinary hardy border where they might be overgrown by robust plants like phlox or chrysanthemums. Like many other alpines they do better on walls and in the rock garden than in the level garden, because they need perfect drainage. My plants never bloomed but they are worth growing for the foliage. The flowers are half an inch across, according to some authorities, while others say they are inconspicuous. The only character by which the true Spanish stonecrop may be known is this — the floral parts are in sixes.

Two running mates of the Spanish stonecrops which are offered by European dealers in alpine and rock plants are *S. dasyphyllum* and *brevifolium*. The only way the collector may be sure of getting what he buys is to study the anthers. Those of Hispanicum are purple, of dasyphyllum, black, of brevifolium pink. *S. brevifolium* has white petals with a pink midrib; the others have pinkish white flowers.

### THE LYDIAN STONECROP

The Lydian stonecrop (*S. Lydium*), differs from the little charmers just described in having green — not glaucous foliage. Yet two American nurserymen advertise only "S. Lydium glaucum." Both plants disappointed me greatly for one had yellow flowers and the other white, whereas the true Lydium has a pinkish flower only one-tenth of an inch in diameter. Moreover, I saw the plant in the rose beds at Gravetye and my note books says "The flower is a quaint little thing and the whole plant is full of character." "The English Flower Garden" says it is "a pretty little plant from Asia Minor, scarcely an inch high, similar to *S. Hispanicum*, except that the tiny, crowded leaves are greenish and tipped with red. For edgings or slopes bordering footpaths it is one of the best, and likes plenty of moisture. It roots on the surface with great rapidity, and may therefore be speedily propagated. Very small pieces put in the soil in spring soon form a mass of rich evergreen verdure, scarcely an inch in height and level as turf.

### THE BLUE ANNUAL STONECROP

The blue-flowered stonecrop (*S. cœruleum*), is the only plant of its color in the genus, so far as I know. (See page 16). Unfortunately it is only an annual, and therefore, must be raised from seed every year. It grows only two or three inches high and the minute pale blue flowers are borne in clusters about an inch arcoss. It needs sandy soil. This is the plant which Gray took as his "model flower," because it has all the parts that a typical flower should have, and in their right number and place.

The wall pepper or biting stonecrop (*Sedum acre*) in an American rock garden. It is covered with yellow flowers about half an inch across in June and July

# Flowers for a Makeshift Greenhouse — By Martha Haskell Clark, New Hampshire

SUCCESSFUL RESULTS IN AN UNLIKELY SITUATION, AND PRODUCING A CONTINUOUS SUCCESSION OF FLOWERS FOR HOUSE AND TABLE DECORATION ALL THE YEAR ROUND — FLOWERS THAT ANY ONE CAN GROW

MY LITTLE conservatory certainly qualifies as a makeshift. Strictly speaking, it is not a greenhouse at all, but merely a small room, eight feet square, situated in the southeast corner of our house, and given over to the growing of plants.

The only attribute of a veritable greenhouse that it could boast, when first built, was an unlimited supply of sunlight. In all other respects, its original, unimproved form, was woefully lacking, and even now in the light of three years' hard-won experience, and many sadly needed changes and additions, it leaves much to be desired.

Window-strips have, to some degree, modified the mistake of casement windows with their inevitable cracks. Boxes, fashioned like greenhouse benches, allowing plenty of root-room, and minimizing the labor and frequency of watering the plants, have taken the place of the plain board shelf that was our first provision for the many inconvenient flower pots; a standpipe and faucet have done away with the daily necessity of bringing water across two rooms — but double windows are still a much-needed requirement for winter nights.

But if the particular mission of any greenhouse is to furnish its owner with a healthful hobby, never-failing pleasure and interest, and a sufficient quantity of flowers and artistic effect to warrant its existence, then my little makeshift greenhouse has not been found wanting.

Three conditions stand out predominantly as necessities in the success of any accommodation for plants:

First, there must be enough humidity in the atmosphere, or red spider will prove an ever-present nuisance.

Second, the first appearance of green aphis must be promptly discouraged, for even a day's neglect will see hordes of the pests in unroutable possession.

The Chinese primrose has the largest individual flowers of the family

Third, you must suit your list of plants to existing conditions, and not to your own desires or ambitions.

Two years of greenhouse beauty lost through experimenting with plants unfitted for my conservatory's atmosphere, have taught me to lay particular stress upon this point: "Not what I want, but what I can grow most successfully."

*Primula Kewensis*, with yellow flowers is unusual in color and slightly fragrant

The condition of humidity I have fulfilled, by boiling a chafing-dish, half full of water for one hour a day, or until the windows are thoroughly covered with steam. A flat pan of water is also kept evaporating on the radiator.

The pest of aphis, is easily managed by close attention, and the prompt use of any of the advertised aphis remedies. Even a powdering of common snuff is sufficient to hold them in check, if applied in time.

The answer to the third stipulation, that of the plants used, I have discovered from my own experience, as far as concerns my own needs. The plants of which I now speak, will stand, with only slight loss, great extremes of heat and cold, from nearly ninety degrees in the full noon sunlight, to almost freezing at night, and yet will thrive, and give a good percentage of blossom. To any owner of a "cool greenhouse" or of merely a shelf window garden, they will prove dependable friends.

### VINES FOR COVERING WALLS OR TRELLIS

Nothing is so sure as the common nasturtium. Seeds planted in the conservatory by the first of September blossom by late January, and continue throughout the spring. If given plenty of root-room (not being planted in a flower pot) the leaves will equal the size and general vigor of those grown out-of-doors. Overcrowding must be avoided. Three plants are sufficient for a trellis six inches wide, as they branch freely. A pretty effect is gained by using one color to one trellis.

Concerning the different varieties that I have tried, Lobb's climbing hybrids are the freest-blooming, although Madam Gunter's hybrids are a close second, and give many unusual color combinations. The new variegated-leaved, are not particularly free in bloom, but the marbled foliage is so beautiful as to make them desirable. The ivy-leaved kinds are rather weak in growth, and not at all lavish in blossoms.

### BULBS THE SURE STANDBYS

Bulbs are among the most satisfactory plants for any makeshift corner for plants. Bulb culture is so well known that only a word will be necessary here. The bulbs are potted in fall and left in the dark, for a period varying from six weeks to three months according to the variety; one thorough watering every two weeks suffices. I plant mine in a modified florist's "flat," fifty bulbs in a box. These are brought into the light in succession to get a long season of bloom from January on. Roman hyacinths, Dutch hyacinths, narcissus (trumpet and polyanthus) and crocus are grown.

The above, while by no means the only satisfactory bulbs for conservatory culture, are by far the most satisfactory for the amateur, or for any one who must depend upon a window garden, or a makeshift for their flowers.

Taking this list for your mainstay, however, it is always interesting and enjoyable to try a few dozen bulbs of unfamiliar kinds, merely for the fun of experimenting

Of begonias. Gloire de Lorraine can be depended upon to give a profusion of pink flowers

Only a makeshift, but nevertheless a source of much real pleasure, and gives flowers all through the winter and spring months

Of other bulbs that can be mentioned for this purpose are, Early flowering single and double tulips, Peacock iris, Spanish iris, anemones, ixias, gladioli, zephryanthes, Easter lilies, lilies of the valley, ranunculus, and many others that you will find listed in most florists' catalogues.

Having tried nearly everything named in the catalogues, from tea-roses throughout the list of tropical plants, during the first two years of my little conservatory's life, I have gradually been forced to depend entirely on different species of begonia, geraniums, primroses, and impatiens for the plants that I am sure of growing successfully. I have accordingly specialized in these four, with the addition or a few double petunias, stocks, and calendulas, brought in from the outdoor garden in the fall. These last named are used for fillers, and can not be depended upon except in the case of the petunias. The others generally succumb to frost or insects before the winter is over. I have tried pansies, that do well for a few weeks, but they are so susceptible to aphis, that they have proved more bother than they are worth.

### GERANIUMS

All that I have tried seem to be satisfactory. To my mind, it is more artistic to use a single variety for the outer edge of the conservatory, nearest the glass, than to mix colors. Others may enjoy making a collection of various colors and types. One must be sure however, of buying very small plants, in early fall, if the plants are wanted for winter blooming. The larger plants will not blossom satisfactorily until spring, while the small ones will begin as soon as they are well established in their new quarters (usually about four weeks) and will continue all the winter. I have depended on a single, salmon-pink variety, Mrs. E. G. Hill, for the past two years, as it is most free in blossom.

### BEGONIAS

The Gloire de Lorraine, and gracilis hybrids, that come in shades of pink, scarlet and white, are the only begonias that I have found to be perfectly trustworthy in an uncertain temperature. These, however, are a mass of blossom during the entire year. They can be slipped very readily, and one large florist's plant of each variety, bought in the fall, will provide many dozen plants for the conservatory. The little plants bloom when very young, and are rapid growers. Though hardy, it is not best to plant them near the glass, if the climate is severe.

### PRIMROSES

These have proved by far the most trustworthy plants in my conservatory, and consequently I have made them my specialty. I raise my own plants from seed, in a shady corner of the yard, and they require very little attention after they have made the second pair of leaves. Seed planted in pans in the house, in early April, will provide plants that will bloom from about December until late spring. The following kinds are the ones that I can recommend as entirely satisfactory.

Of the Chinese or regular florists' type, the singles, in shades of pink, scarlet, white and streaked, also one purple-blue variety, are all easy to grow and most satisfactory. They flower the earliest. The doubles, in like colors, are good too. The fern-leaved forms have graceful foliage and are a welcome relief. The flowers are the same as in the ordinary singles.

Stellata is a simplified form of the Chinese, of pyramidal growth, and will repay extra care in protecting and attention, by its blossoms. These form a pyramid about eight inches high, in shades of pink, scarlet, lavender and white.

*P. obconica* comes in shades of lavender, scarlet, pink, and white, running decidedly to lavender. The flowers are more graceful than in Chinensis, and borne well above the foliage. Equally free in bloom. They are one of the stand-bys for conservatory or house-culture. This species is poisonous to many people, and care should be taken in handling it if one is susceptible. Others, of whom I am one, are not affected.

*P. Forbesii* (the Baby Primrose). Shades of lavender, fading to almost white is the freest flowering primrose known. Plants of only three inches high will blossom if allowed, but it is best to pinch off the flowers from the seedling plants during the summer if blossoms are wanted for the entire winter and spring.

*P. floribunda*, resembling the obconica type, but yellow. Very free in bloom, and satisfactory. This, and the following are the best, and most reliable of the yellow forms for the amateur to grow.

*P. Kewensis.* A new hybrid, that adds fragrance to the list. Flowers quite freely produced, in shades of yellow, with a bluish or lavender reverse to the petals. The fragrance is rather faint, but a number of the plants grown together will pleasingly scent a small conservatory.

### IMPATIENS

Of this old-time favorite for house culture, there are now a number of extremely beautiful hybrids. While none of these are as free in bloom as the original magenta-pink variety, they are much more satisfactory. Of the varieties I have grown, the following are the best.

Light-leaved salmon-pink. So distinguished, as there is a dark-leaved variety that is very scanty in blossom. The light-leaved, however, can be bought in all shades, and is very free in blossom.

White. This has a maroon eye, and is not particularly free in bloom. Should be included in a collection, however, as the flowers are very beautiful.

Scarlet. A new hybrid, the exact color of a holly berry. Very free-flowering, and generally satisfactory. These plants are extremely beautiful in the conservatory in winter, when there is snow on the ground outside.

A complete calendar of the year's work in the greenhouse is given on page 30.

# Starting Dahlias Early — By E. S. Johnson, Pennsylvania

## GROWING "GREEN PLANTS" FROM TUBERS, READY TO PLANT OUT WHEN THE GROUND IS WARM—INCREASING YOUR STOCK OF FAVORITE VARIETIES AND SOME PLAIN TALK ABOUT AFTER MANAGEMENT

THE "green plants only ready in April," of the dahlia growers' lists may be made at home during February and March by anybody who has a sunny windowsill to spare in an ordinary living room. In England many amateurs and their gardeners grow all their dahlias from early spring cuttings; so that English lists frequently print a rate for these, ready to root, the prices being about half that charged for dormant pot roots. (Field grown tubers are not in favor with the English dahlia growing public, and are not sold except for propagation; i. e., the growing of shoots from the "collar," which shoots are rubbed off carefully and dibbled into sand to root, like a stem of coleus or salvia or geranium.)

The use of green plants, instead of dormant pot roots or field tubers, is especially favored by fanciers who want mammoth blooms for exhibitions held during the month of September. Possibly the coincidence that green plants are set in the ground in May with a very limited root-system to feed from, and so come into flower for the first time during the last ten days of August or later, favors the general belief that "green plants are what you want for big prize flowers." Personally I can see no difference in flower or habit in pairs of plants (first rate English novelties which I procured last season in dormant pot roots) one put in the ground a rooted cutting with six leaves, and the other, alongside, growing from the pot root. Had either plant been trained to the crown bud style of flowering, that plant would have shown the one or two or three mammoth flowers beloved of the exhibitor.

My own use of the "green plants in April" is penny-saving rather than visionary. If I buy one field tuber or one dormant pot root of a new or rare variety, I order it early and multiply it at once, without waiting a year for increase, or wasting my substance on half dozens of imported roots with accrued postage, duty, etc.

In a bulb-pan, a deep cigar box, or in 4-inch pots, I firmly press down the dormant roots into light, friable garden soil, cover with a sprinkle of soil (and if the roots are in the least mouldy a dusting of sulphur and air-slaked lime). Water well, make sure that the labels are firmly inserted each to its own root, and place over the boxes a pane of glass apiece.

An inverted glass tumbler is easier to use on 4-inch pots than small flat panes, and gives more air. The pots and boxes should then be set in a warm window in full light. Even in February or the first of March, heat and light will sprout the small dormant pot roots, which would not of their own accord start before the middle of April. Field tubers start more readily, as they have been dry longer; and whole field clumps, should you desire to propagate plants from them, need only be set in earth or ashes in the furnace cellar, with one good watering and little light, to produce splendid shoots.

Gondola, a free-flowering pink cactus in pillar form with flowers coming on new root-shoots at the bottom. Inflorescence wholly axillary, never terminal, becoming short stalked on older branches

After five days, some of your choice pot roots will show white or pinkish sprouts pricking through the ground. Others take two or three weeks to make any growth. Some pot roots, too, seem to have very little "collar" and cannot develop any second sprout if the first and only one is picked off. In such a case, you have only your sprout to depend upon; your dormant root will be dormant forever, and even if the cutting roots satisfactorily, you are no better off than at first.

In view of this risk, it is worth while to be cautious in removing the young tops. If a root has one visible shoot, let it grow an inch long; then remove the cover glass, drip a gentle stream of water on the soil so as to wash the top of the dahlia root clean, and examine it very carefully. (Do not confuse the white hoary feeding roots, that grow out from the sides and extremities of the tubers, with the white shiny, scale-clad stem sprouts that proceed from the neck or "collar.")

If a tiny, pinkish, shiny eye shows at one side of the inch-long sprout, or one or two secondary sprouts are plainly under way, remove the inch-long sprout, tearing it carefully away from the corky base on which it grows. But if no other sprouts or eyes show on your original root, sift on a new covering of soil, replace the glass, and leave it for a second examination after a week. The first may be the only sprout: in this case let it grow naturally to six or seven inches, then pinch out three inches of the top for a cutting, just as you would take a geranium slip, and your original

Souvenir de Gustave Douzon, the "red sunflower" dahlia. The single-stem system is the only one for good long-stemmed flowers with these giant decoratives. Two (or three) root-sprouts are as many as should be allowed

plant will grow from an axillary sprout sent out at the first pair of leaves.

The sprouts may be from an inch to four inches long for rooting; they start better if they are taken off before they develop leaves and so increase their evaporation. They should be pricked in, right side up, in firm clean sand, kept fairly moist, with or without bottom heat, and stand in full light after three days, with no glass over them. Early in April — about the time when hyacinths are in full bloom in sheltered beds on the southeast side of the house — I am accustomed to cut a third crop of sprouts from the forced roots indoors and prick them in between the hyacinths out in the cold ground; and they root as well as do any set in bottom heat. The basal tissue of the sprout just at the point of junction with the "collar" is amazingly ready to make rootlets at any temperature that does not fluctuate much; and the fatter the original sprout, the greater, generally, is its vitality in root-making when thrown upon its own resources.

The cuttings, once rooted, begin to throw one or two long thick roots laterally. I have had a 3-inch stem with one 6-inch and one 2-inch root. For this reason they cannot be grown long in the propagating sand, or they will tangle and break each other. If tangled, they must be plunged in water and washed free of sand and of each other. They may then be potted up in small pots of ordinary earth; or if the season is far enough advanced I plant them at once in the garden and cover up on chilly nights at first.

The original pot roots, if grown four or five in a small flat box, will have to be washed free of each other before planting out. This does not annoy the dahlia at all if the rootlets are given reasonable care in handling and planting. Roots started in individual pots may be jarred out and set like a florist's geranium that you buy in the market; and like the geranium, by the end of April will be conspicuously pot-bound. It is advisable, though not necessary, to wash out, or otherwise unwind, some of the long white roots of these pot-bound plants; if you do not trouble to do it, the dahlia can soon replace them with others just as good, sprawling off hungrily through the soil in all directions, while the pot-bound core remains small and of no account in the centre. In other words, root-tissue in the dahlia — in the spring months particularly — has all the nine lives of a cat.

And now some words as to the subsequent management of the dahlia:

1. *Planting* — Manure in the hills where the plants are to grow, not in the whole piece of ground to be planted. Give a peck of stable manure and a teacupful of bone meal to each hill. Work into the soil *under — not touching* — the tuber.

Set a stout stake at each hill, firmly planted, and at least five feet out of the ground. Plants expressly catalogued as "dwarf" should be set in an outer row of the bed with 3½-foot stakes. (Cactus varieties Britannia, Standard Bearer, T. G. Baker, for example, begin to bloom at two feet and rarely get above three and a half.)

Plant one tuber to a hill, laying it horizontally, with the sprout end toward the stake. Cover two inches deep, or less if the ground is stiff. No fertilizer, sods, or decaying weeds should touch the tuber, for they harbor mildew and attract cutworms and wireworms. Insects and fungus always attack a tuber *at the sprout end*. If a tuber shows blue-mold when you are ready to plant it, sprinkle it well with powdered sulphur.

2. *Growth* — Keep all plants growing rapidly. Do not allow any side shoots till the plant is eighteen inches high. Grow it tree form with *one* straight trunk. After eighteen inches, leave *one* additional sprout, pick out the next *five* in the leaf axils as fast as they show; then leave another and pick out five; and so on. Keep the joints of the main stem long and brittle by forcing the sap to a few points at once. This stimulates roots, gives large heavy foliage, and enables the plant to grow vigorously through sudden hot weather and drouths. Only when a plant has three or four pounds of root system should it have to sustain a large branching head — that is to say, by the middle of August for most varieties.

Keep the main stem and branches always erect, by cloth ties. It is not an exaggeration to say that *no* first class blooms, and few blooms of any kind, ever grow on a branch which has fallen down and grown horizontally more than three or four days. A bent branch will send up pairs of erect sprouts at every leaf-joint. No leaning dahlia ever does its best: the flowers are slow in growth, short stemmed often pallid or lop-sided. Also, an erect dahlia will live through twenty windstorms, where a leaning plant breaks with two.

After June 15th, allow each plant to send up, from a joint near the ground, or preferably from the "collar" underground, one sprout. Treat this as a secondary trunk, keeping it erect, rubbing out side-shoots, etc., just as with the main stem when young.

About August 5th or thereabouts, generally after a rain, the plant will branch again from the bottom; train one more of these sprouts. Two more may be allowed in September on a strong plant, especially if you are giving nitrate of soda in water weekly through the latter part of the month. But on all these secondary trunks five sixths of the side-sprouts must be kept cleaned out. On all the upper branches five sixths of the side sprouts should be rubbed out when very small. A three-fold crotch, branching at the next level into nine more branches, divides the sapflow too greatly, dwarfs that bough, and grows a spinach-like head of small leaves closely overlapping, instead of bearing flowers. This is a common affliction of dahlias; it is variously laid to "disease," "hot sun" and "dry weather." Pruning is the preventive; and pruning is the remedy, too, if a plant is otherwise healthy. Remember that dahlias flower on new wood.

Cactus dahlia, Phil May. A free bloomer, but inclined to harden in the stalks and grow dwarfish unless very thoroughly pruned. Good open growth is shown here, in spite of two weeks of intense heat in July. The plant has three secondary sprouts from the root, beside the single stem originally allowed

3. *Insects* — The rose bug, the striped cucumber beetle, and the spotted cucumber beetle, may appear in late June, eating buds and young leaves. Spray with weak arsenate of lead solution toward evening, and repeat a week later if necessary.

Aphis, and a jumping insect called locally "white thrip," may appear at any time. They poison the sap of young plants, and injure foliage and flower buds on adult ones. Use kerosene emulsion as for rose bushes, early in the morning. Spray from underneath, with fine spray and much force. Three to a dozen applications may be necessary.

4. *Cutting flowers* —The more dahlias you cut, the more your bushes will bear. Cut good sprays, buds and all: the plant is nothing but a factory for turning out more, and, like a factory, if this week's output lies unwanted and useless on the premises next week it will work only half-time. Many a good plant of my garden gives fifteen flowers a week cut in sprays fifteen and eighteen inches long, two or three unopened buds to the spray — fifteen flowers, that is, and thirty odd buds, per week. A small flower-bud is no more to a dahlia plant than a small leaf, and is replaced somewhere on the plant's surface inside of forty-eight hours. It is a grave heresy to say of your dahlias, "They are short, because I didn't want to cut the buds." Cut buds and branch and all; don't have them "short"; and you will so prune the bush and stimulate the sap that flower stalks will actually lengthen. This is not theory; I practice it, and I know. Also, for commercial cut flowers, any florist who does much decorating through September and October will pay $1.50 per hundred for your freshly cut, long-stemmed flowers, cactus, decorative, or ball; and not a picayune per bushel for the most beautiful 6-inch-stalk cabbages you can offer him. Special orders for one color, or for very large flowers, or yard-long sprays (Jeanne Charmet, Gustave Douzon, or any extraordinary giant white which is durable in water), of course command special prices.

5. *Varieties* — In buying from the catalogue of a reliable dealer, the average purchaser had best choose varieties listed as "free flowering" or even "very free flowering." Some splendid exhibition dahlias are not worth their board in a flowery flower garden. After freedom of bloom, consider long flower stalks, color, and price; these in the order named. Size is desirable, but not an essential either for garden effect or for cut flowers.

## Dahlias in Southern Gardens

By T. J. Steed, Georgia

DAHLIAS can be grown to perfection in the South, either from roots or seed. Those grown from seed are not as large nor as early as those grown from roots, but very fine flowers can be had. By sowing seed you get a great assortment of varieties, and possibly something entirely new. The time for sowing the seed is February, in hotbeds or coldframes. Be careful not to sow too thickly, and transplant to permanent quarters just as soon as possible so that the plants will have plenty of time to grow stocky, as weak, thin-stalked plants (which are the result of growing too close together or in the shade) never amount to much, more especially the first season. Be sure to get good seed; cheap dahlia seed is expensive in the long run.

Select a sunny place for the plants and a rich, sandy loam soil, if possible, and spread a good quantity of cow or sheep manure over it (if done last fall so much the better) and spade it under deep, loosening up the soil. Never plant dahlias on poor soil without manure and expect results.

Good strong roots in good soil should stand two and a half to three feet apart each way. And that is the kind to buy. They cost more and they are worth more, as they will produce more and bigger flowers. Seedling plants should stand eighteen inches to two feet apart each way. Keep the beds free from weeds and grass at all times by frequent shallow cultivation. Allow only one stalk to a root, and if very large flowers are desired, prune and disbud as you would chrysanthemums, allowing only from two to four of the main central buds to develop.

If the season is dry when they begin flowering, water should be given (a gallon to each plant every afternoon, or two gallons every other afternoon) in trenches beside the plants. Cover the surface with dry soil as soon as the water has soaked in. Liquid manure applied twice a week is also beneficial in producing extra large flowers. If liquid manure cannot be had, dissolve one ounce of nitrate of potash or nitrate of soda in three gallons of water and give each plant a gallon of water at a time. This should begin just before the buds begin to appear and continue until large buds have formed, or until the flowers begin to open.

A mulch of green grass is of great benefit to the plants in the summer, especially in the middle and lower South. It preserves the moisture and keeps the soil cool. If the grass is not obtainable, strawy stable manure is a good substitute. Stake the plants to prevent high winds from blowing them about. Use strips of soft cloth one inch wide for tying the plants to the stakes. It is a good plan to plant dahlias in a spot which is protected from the wind, provided it is not in the shade or where the soil is penetrated by tree roots.

In the middle and lower regions, dahlia roots keep best in the ground where they grow, if it is well drained. I usually cut off the tops in November and cover the bed with strawy stable manure, which is dug into the soil in spring,

When they are flowered successfully dahlias are among the most pleasing of garden flowers. The starry-rayed cactus varieties are the most esteemed

Reader's
Experience
Club

(Editor's Note.—*We want to know how successful workers do things in order to put actual experiences before our thousands of readers in all parts of the country. Every reader is invited to contribute a short note on some interesting experience. Just state the facts about some ingenious idea that you have actually worked out yourself or have seen.*)

### Bulbs in fibre

Having read that bulbs grown in fibre produce earlier and better flowers than those grown in soil I decided, last winter, to try the experiment. The bulbs were planted in moistened fibre in non-porous bowls, put in a darkened, unheated room, and the fibre kept moist. Growth soon started, the root-growth being particularly vigorous, the roots in some cases pushing up above the surface of the fibre. Two Roman hyacinth bulbs decayed, probably owing to too much water, and two Narcissus Horsfieldii bulbs were destroyed by little white grubs. The rest grew finely and produced many plump buds, but most of the buds, when about ready to open, gradually dried up and I had hardly any flowers at all. I would be very glad if anyone could throw any light on the causes of these poor results.— H. C., New York.

### Combining anemones and abutilons

Having some surplus roots of white anemone several years ago, I filled in all the space around a row of young abutilons, intending to remove the plants later. The latter were about six feet tall and of bushy growth, so I was surprised to see the windflower plants making a thrifty and vigorous growth. They climbed right up through the branches of the "trees" and several feet above them, and as the anemone foliage is completely hidden beautiful and rare anemone flowered Japanese maple trees are glorifying one corner of my garden. Even in the space set apart for anemones, with their best interests catered to it in every way I have never had as lavish bloomers, or as perfect blooms as my tree garden shows. In the spring and fall, when it is necessary to fertilize the shrubs, I lift the anemones and later put them back in the bed without being hurt in the least.— E. S., Cal.

### Climbing cucumbers

Our garden space was very limited last year, and as we were fond of cucumbers and had no place for them in the garden, we planted seeds of the Japanese climbing variety by the back porch, just where they would catch the drip from the refrigerator. At first they needed strings, but soon the lattice around the porch gave them the necessary support, and they grew in a most astonishing manner, giving us all the cucumbers we could possibly use — and more, too.— D. R., Ill.

### To control spreading

In order to control the spreading habit of Achillea The Pearl and similar plants, which increase by suckers and have no respect for their garden neighbors' rights, plant them in a box and knock out the bottom before sinking it in the border. I have known this trick to be used with the plume poppy (Bocconia), a similar offender.— A. H. B., Penna.

### Making house plants comfortable

Many people complain that they cannot keep house plants through the winter on account of gas. My experience has been that it is not so much the gas in the house as the dry, hot air. I had the usual difficulty but now by a careful study of conditions I have flowers all winter. In a small city house — one built on the tunnel plan, with windows only in front and rear — it is difficult to find a suitable place for plants. It was because the bathroom window faced south that I first thought of putting some of my favorites there. This proved the best possible place, not on account of being a south window, but because the plants had a moist atmosphere. In addition to the free use of water by the family I made a point every day of letting the hot water run until the reservoir was emptied, and the steam had given the room the true greenhouse atmosphere. The window-sill and two shelves above it were filled with plants. I had twenty plants of Chinese primroses; a fine plant of *Primula Kewensis;* oxalis, begonias, and among others, what was new to me but a good bloomer, *Eupatorium riparium.*— A. H. B., Penna.

### Making a planting soil

I have a little scheme for preparing the soil in which seed is to be planted, and I seldom fail to get a good stand of plants if the seed is all right. I make a hand sieve of convenient size about 14 x 24 x $3\frac{1}{2}$ in. using wire mosquito netting for the screen. Through this sieve I pass sufficient garden soil to give me three or four pails of sifted soil. I also pass through the sieve the same quantity of builders' sand. I then thoroughly mix together the sifted soil and sand. Passing it through a coal sieve a few times will do the trick, although it can be done with a shovel. The above quantity is sufficient for an ordinary garden for one season. After sowing the seed in a drill, I cover with the soil-sand mixture and thoroughly firm covering on the seeds, usually by standing on a narrow board placed over the planting. No matter how hard it rains or how hot the sun shines, the sand keeps the covering friable and the seed-sprouts easily break through. If the covering is dry it will run from the hand the same as timothy seed does when a handful is held up with thumb uppermost. This facilitates equal distribution of the covering. My plan takes less time in the aggregate than the old way of picking out the stones and pulverizing the soil by hand as the seeds are covered. I use the mixture on all seeds smaller than corn, beans and peas. A heavy clay soil may need a larger proportion of sand.— G. E. S., New York.

### Wild cucumber as a fence

Desiring to cover an unsightly wire fence. I sowed the seed of the wild cucumber (*Echinocystis lobata*) late in October. The first of June when the vines were up and growing well, I set out in front of them plants of the early-flowering pink cosmos, which had been started in the house. The cosmos commenced to bloom in July, and the effect of the dainty pink blossoms against the background of light green leaves, was very pretty. But in August, when the vines were a mass of feathery white bloom, and the cosmos also blooming abundantly the effect was charming. The cosmos served to conceal the bare stalks of the vines for the wild cucumber sheds its lower leaves early.— R. V. S., Maine.

### Flowers for a shady border

If one wants to have a border of flowers in a shady place, it is very hard to find bright colored flowers that bloom well. But any of the following plants will make pretty a shady place from the middle of May until frost. For May bloom put to the front of the border a lot of wake robin (*Trillium grandiflorum*) and Spanish bluebells (*Scilla Hispanica*). The former are white but turn pink before they fade. They need no care after once started but it is best to put leaf mold around the roots when planting. The scillas come in blue, white and pink. At the back of the border a few bushes of *Azalea Hinodegiri* would be a mass of red flowers in May — this is a better color than the commoner amœna — it is very hardy; but if too expensive bleeding heart (*Dicentra spectabilis*) does well in the shade and produces its pretty pink flowers during May and part of June. It grows two and a half feet high but dies down later so should be put back of plants that will bloom late in the summer. For June dark red and white sweet William planted in masses toward the front of the border is very bright all the month and into July, when the bee balm (*Monarda didyma*) comes into bloom and lasts till the end of August. Plant this in masses also. Clumps of cardinal flower (*Lobelia cardinalis*) are lovely for the end of August and part of September. From then till frost the Japanese anemones in deep and light pink, and white are beautiful. All these plants are perennial and need little care. To fill any vacant places in the border, tuberous begonias bloom all summer and do well in shade, but the bulbs have to be taken up in the fall. They are low-growing, so are best at the front of the border.— M. N., Penna.

# CHILDREN'S GARDENS EVERYWHERE

LAYING PLANS FOR THE COMING SEASON—HOW MUCH SEED TO PLANT—THE STORY OF ONE SCHOOLGIRL'S FLOWER GARDEN FROM WHICH SHE REALIZED BIG MONEY PROFITS ON SWEET PEAS, ASTERS AND SALVIAS

Conducted by
ELLEN EDDY SHAW
New York

## Winter Gardening

SOME children will laugh when they look at this title. Winter gardening! Yes, indeed, there is such a thing as winter gardening. And if you are a true gardener and not a "make-believe" one, you will do gardening not only from April to October but all the year through.

The winter is the time to lay out plans for the early spring garden. Not all these plans can be held in your heads, so they should be put on paper. Suppose you have never had a garden before; then first decide on the size of your future garden. Perhaps your father says that you may have the entire back yard. If it is a large yard, do not accept this whole offer, but only a portion of the offer and of the yard space. It is wise to start modestly. But if you have had a garden before, why not either increase its size now or increase its present efficiency?

To increase the efficiency of a garden plot simply means to make the soil work harder and to have no waste places. Make a plan for your garden that provides for the use of every inch of space all the time. Doesn't that sound like power?

Now as to the plan! You have the dimensions for the garden plot; the next step is to decide on the scale to use when the plan is to be put on paper. For surely you cannot have a "life-sized" drawing of the garden. So decide on what fraction of an inch shall stand for a foot. Let us pretend that one eighth of an inch is to represent each foot of space. If the garden plot is sixty-four feet long, an 8-inch line will represent the sixty-four feet of length. If it is forty feet wide, then the line on paper to represent the width will be five inches or one eighth of forty. So the paper plan will be eight inches by five inches. This will make a pretty small drawing. Make a plan large enough to be of some help.

The beginning of a successful girl's garden — April

If there is a building, or large rocks and trees on your garden spot indicate these on the plan. Such obstructions take space and interfere with the placing of rows and drills, so some account must be taken of them on the plan.

After the mere outline of the plan is drawn (and by the way use India ink or some good drawing ink for this work), the rows must be indicated. As far as possible run rows and drills north and south. It is far easier for a beginner to lay out his garden in rows. Indicate the rows on the plan by means of dotted lines; indicate bushes and trees by means of circles. Letter or number the rows. If you print nicely you might letter in the names of the vegetables and plants along the dotted lines in the plan.

Be sure to indicate the points of the compass on the plan and also mark the scale you are using. When one looks at a garden plan one should be able to interpret it without a verbal explanation.

You may make out one plan in January and decide you have made a good, efficient, economical one, and then make it all over again when February comes. The time put on the first plan is not wasted. It has helped you to work out another far better arrangement of your garden.

Allow no space for the planting of lettuce, radish and parsley. These may be sowed in between other crops. Sometimes radish and parsley are planted together in a drill. Suppose you have decided on a given space set aside for the raising of early peas. Then you must also plan to put something else into this space later after the peas have gone by. A crop sown like this to succeed another and earlier crop is called a "succession" crop.

Another piece of winter work is to choose and order your seed. After the garden plan is made you know just what kind of seed you are to plant. By looking at the dotted lines on the plan you see just how many feet of each kind of seed you are to sow. Let us say that on your plan is a line representing a length of 100 feet and the word peas is printed along this line. The question now arises as to the amount of peas to buy in order to plant 100 feet of this seed.

In picking out and planning for succession crops, or in estimating the quantities of seed necessary to buy, and in figuring on distances apart to make rows on your plan, use the following table:

| NAME | SEED TO SOW 100 FEET | DISTANCE BETWEEN ROWS |
|---|---|---|
| Beans (bush) . | 1 qt. | 2 ft. |
| Beet . . . | 2 oz. | 1 ft. |
| Carrots . . | 1 oz. | 1 ft. |
| Corn . . . | 1 gill | 3 ft. |
| Lettuce . . | 1/4 oz. | 2/3 ft. |
| Peas . . . | 1 qt. | 2 ft. |
| Radish . . . | 1 oz. | 1 ft. |
| Squash (winter) | 2 oz. | 8 ft. |
| Tomatoes . . | 2 oz. | 3 ft. |
| Turnips (early) | 1/2 oz. | 1 ft. |

Order your seeds early. Put them in tin boxes so that mice will not have a feast. Be all ready on planting day.

There are a few other things to plan for. Are your tools ready? For a small garden you will need a spading fork, hoe, rake, transplanting trowel, and hand cultivator. Are your labels, stakes and garden reel made? These are pieces of work for the manual training shop at school or for spare time work at home.

This month be sure to make that garden plan. This story of a season in one girl's garden is worth reading. Follow her

In June there are flowers for cutting

example and change your yard into a thing of beauty and of profit.

## One Season in a Girl's Garden

MY GARDEN has been one grand success this season. It has been a mass of flowers from the thirtieth of May until late October.

April was a very hard month for the amateur gardeners here as the weather was so cold and wet. There were heavy frosts every night until the 22d. From the 22d to the 30th, the weather was favorable. My hotbed was so crowded that the plants were really spoiling. But I got my coldframe plants transplanted to the garden. This gave me a chance to transplant from the hotbed to the coldframe.

The picture of my garden taken in April gives you an idea of the work I had ahead of me. My lily bed with eight varieties of lilies is in the foreground, next is the tritoma bed. In front of my cultivator are India pinks, just transplanted from the coldframe. The pile of brush behind the pear tree is for my sweet peas, which are up and looking fine. The card on the apple tree is my business sign.

The June picture shows my garden at a time when the garden supervisor, Miss Miller, visited it. The August picture gives an idea of the beauty of my aster beds.

The garden in aster time, August. These flowers brought money to one schoolgirl

I would like to tell you something about all the flowers, a hundred varieties of which I have in my garden. But I will tell you about sweet peas, asters, and salvia. Almost every garden has these flowers. I planted one ounce of sweet peas on February 22d. The seed cost me fifteen cents. From these plants I cut 1,000 peas in June at fifty cents per hundred, 700 in July at thirty cents, and 500 in August at thirty-five cents. So you see I made $8.85 from a fifteen-cent investment in seeds. These were all long stemmed with three and four blossoms on each. You can see the pea vines in the June picture. The vines grew over six feet high; and I am more than satisfied, as this was my first attempt with sweet peas.

As for my asters, they were among the best in the city. I had nine varieties. I think Lady Roosevelt and Mary Semple are my favorites. I cut asters measuring five inches across with stems thirty-three inches long. I took a bunch of one hundred to one of our leading florists, and he offered me a special price for all I could furnish him. The picture will give you a fair idea of how they looked in August.

The salvia more than paid me for the care I gave it. I sold sixty dozen little plants and put in my garden the eight dozen which I had left. The salvia bed was one solid mass of red, standing three feet six inches high and making a magnificent showing. The seed I got from Africa. The flowers are a deeper red and the plants bloom more heavily than any I have ever seen. I have many other flowers that are worthy of mention but I think my asters, peas and salvia were as near perfection as many of those produced by professionals.

Cleveland, O. Mabel Jane Musser.

## California's "Garden City"

ONE acre of ground, plus seeds, plus tools, plus boys and girls, equals good citizenship. This is a mathematical equation worked out less than a year ago on the campus of the University of California. The problem is still reaching a correct solution.

This is the plan of our Garden City. Over two hundred children, in age from six to sixteen years, have individual garden plots 6 x 9 ft. on the college campus. As ambition grows more land is given. A space marked "Community Plots" has been given over to illustrate the check system of irrigation. A plot is allotted to a child. Experimental plots are used for experiments in fertilization and irrigation. We are working out a general scheme of decoration for the garden as a whole so that we shall have a beauty spot as well as a useful one.

Our plan has been to build around our garden an embryo city. A constitution patterned after Berkeley's charter governs the city. The officers are elected by popular vote. A mayor and six councilmen are chosen. These officers are of course children.

When the gardens are full of vegetables a market is established. Each Wednesday afternoon is given to a mother's market day. With increasing financial friction a bank will be found necessary. Plans are now under way for the erection of a building to house the same. The bank will pay 4 per cent. interest on time deposits. Thus the embryo city will repeat the civic life history of the race through agriculture, the market, and the bank.

What relation does this Garden City bear to the State? It is the laboratory for California. What can be accomplished there can be done in other places.

The agricultural education division of the university is trying to further liberal agriculture in the elementary school, through the organization of California junior gardening clubs. At the present time we have 2,000 children enrolled in one large agricultural club.

Several clubs and garden cities have already been started. The Niles Garden is flourishing under Principal Vincent. Decoto, San Deandro; the Washington and Franklin Schools of Oakland; the People's Place, the Parental School in San Francisco; and the Franklin School in Berkeley, are visited regularly by our extension class composed of university students. Besides these, organization has taken place in the Le Conte School of Berkeley and other schools in the Bay region.

Berkeley, Cal. Cyril A. Stebbins,
*Professor of Agriculture, University of California.*

## A Little Girl's Bulb

I BOUGHT my bulb at school. All the children who wanted to, bought bulbs. I planted mine in a flower pot with soil from the garden. Then I put the flower pot out of doors in the garden. I covered the pot with soil. Eight weeks later I took the pot up and put it in a dark place for a week or so. I watered it every morning. One day I saw the buds. They grew, and grew, and then they came out and they were yellow. I am ten years old.

Worcester, Mass. Helen Porter.

# Unusual Plants for Indoor Culture — By Luke J. Doogue, Massachusetts

WHEN plants are grown indoors the many cases of failure and discouragement are due principally to an unwise choice of a plant and to its condition when brought indoors. For instance, if a palm is brought into the house just after it has been potted the chances are that it will be a long time before it starts to grow, or even to recover from the shock of potting. A palm should be almost pot-bound before it may be expected to grow in the dwelling house. Pot-bound means that the pot is absolutely crowded with roots, when nine out of ten persons would hasten to put the plant into a larger pot in order to save it. If the plant was to be kept in a greenhouse, repotting would then be the proper course but as the plant is to be kept in the dwelling, repotting would then spell failure, for a pot-bound plant in the house, with its abundance of strong roots, when properly watered, can flourish under unfavorable conditions for a long period.

*Asparagus plumosus* and *Sprengeri*, with *Pandanus Veitchii* in the centre. To get a thick growth of the asparagus cut it back frequently

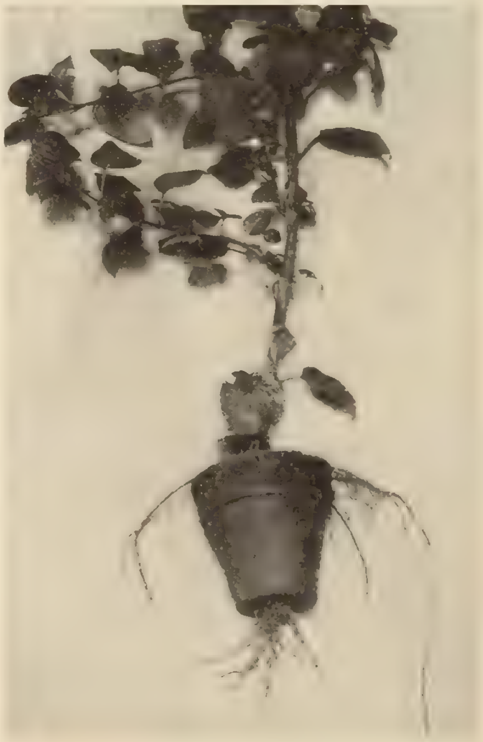
The only thing to be avoided in caring for plants in this condition is allowing them to stand in water that has collected from frequent waterings. Empty the receptacle in which the plant stands every time you water it. Stagnant water means quick death to any plant and particularly to a pot-bound one. I have palms that have not been repotted for years and they are still growing. Once in a while I scrape off a little of the old loam from the top of the ball and put in new, and when spring comes I use a little plant fertilizer — I have no preference as to any particular kind.

### TABLE DECORATION

It is almost impossible to have a centre piece of tender ferns look like anything except a few sickly green stalks for any length of time. Instead of ferns, one of the best things for this purpose is the golden euonymous. This may seem to some rather impractical but I have had on my table for some time just such a centrepiece and I know it is practical. I use very small plants. If you happen to have an old plant it will furnish hundreds of cuttings which will root quickly in sand in a shallow box. Put the little plants, when rooted, into a small flat pan to be placed inside the jardiniere. If the plants grow too tall just pinch them back.

During the winter months give the plants a daily sunning. *Asparagus plumosus* is frequently used for table decoration. After it is brought into the house it is apt to show signs of dying, and before it has had a chance to recover one is likely to empty the dish. If this plant is used, give it time to demonstrate what it can do. Don't throw it out even after it has shown signs of apparently dying,but just cut it back and put it in the sun. When it has once established its root system it will grow,and grow well. Use the scissors on it when it has grown too high, thereby forcing new growth. Such a plant will last for seasons, and its delicate foliage — like lace-like fern fronds is always welcome.

Another very decorative plant is *Grevellia robusta*. The small plants are the most decorative as the very large ones have the bad habit of growing leggy. The decorative foliage is cut into slender ribbons as it were and a very attractive dressing can be made by putting six or eight small plants into a large pot, placing them so that the effect will be globular. A jardiniere filled with these plants is very ornamental. Grow this plant yourself from seed; just sow the seeds in a shallow box and when the plants are large enough, pot them. A large plant for a centrepiece and small ones around it to cover the place where the branches have fallen makes a strikingly handsome decoration. This plant also makes an excellent combination with euonymus. The grevellia will thrive in a house where most plants would die and with care and a sunny window it makes a most desirable and unusual house plant.



House plants, when really pot bound and plunged out of doors in the spring, are apt to send out their roots like this

Euonymus cuttings root very quickly. It is best to pot small plants: they quickly take hold of the soil and are easily handled

The screw pines (of which the variegated *Pandanus Veitchii* is the most attractive) are excellent for the house, but be careful about watering. If you give them any too much, they will die. The pandanus plant wants just enough moisture to keep if from going dust dry and never should water be allowed to stand in the receptacle that holds the plant. I have one of these plants that has not been repotted for years. I have it in the centre of a large pot with asparagus about it. In the summer I cut back the asparagus and plunge the plant out of doors and it is always ready for the house in the fall.

Of the true ferns, only a few really will do well in the house. The small plants of *Lomaria gibba* are decorative until the spores show on the leaves, after which they loose much of their beauty. However they are unusual and are to be recommended.

Of the palms *Kentia Forsteriana* and *Balmoreana* are the best. You will have no trouble in keeping these growing if you water judiciously. Keep them in as small a pot as long as possible. If you feel that you must repot don't dig out the roots but lift the plant, with the soil into a pot a size larger, and press down hard the loam about it.

## Window Gardening Under Difficulties

THE lack of a sunny window, coupled with a slight leakage of gas which no plumber has so far been able to cure, has been enough to kill all but our sturdiest house plant, an asparagus. But we have a little glass wild garden which is a great pleasure.

Everyone knows the fish globes filled with partridge berries which florists sell. The delicate little vines and their bright flowers are so crowded that all beauty of shape is lost. Even without this overcrowding a fish globe is a rather poor receptacle owing to its curving sides, which force all the taller plants into the small but higher central space and prevent good grouping. We utilize a glass cover like the ones used by caterers for covering cakes. They cost from about fifty cents to two dollars, according to size. We invert it and cover it with a circular piece of window glass which we have cut to measure at any place where window glass is sold. Be sure to get good glass, rather thick, but clear and free from flaws. The knob-like handle of the cover may be accommodated by a little wooden stand that has had a hole cut in the top of it.

Moss is the first thing to put in; line the bottom and sides with it. It will also fill in the chinks, cover ugly gaps, and protect exposed roots. A bit of moss-covered wood once gave us a succession of very small orange toadstools which sprang up beside a delicate fern. Give the garden a good watering when it is made, and then — hands off! So long as the moisture gathers on the glass there is no need of interfering, and the chances are that it will keep damp for months.

We have never been able to make violets bloom, but their foliage is always good. On the other hand, foam flowers have bloomed, as well as Jack-in-the-pulpit, although they were neither so sturdy nor so dark colored as their brothers in the woods. Once the gold-thread and partridge berry deigned to bloom, and the bloodroot. Hepaticas are the mainstay, however. The only objection to them is that they blossom too soon. This garden is primarily a winter one, but when we have transplanted hepaticas in October they have flowered around Thanksgiving.

This plant has not been repotted for six years. And it certainly does not look as if it needed larger quarters

Take care to get into your "glass garden" as great a variety as possible, not only in the shape of the leaves but in their tint and texture. Nothing could have been prettier than some sprays of Allegheny vine which we were fortunate enough to have one winter. This wild cousin to the bleeding heart may have less showy flowers than its garden relative, but its leaf is decidedly more delicate. Another plant which thrives under glass is the rattle-snake plantain with its showy, white-veined leaves. We have found that most of our common ferns, such as spleenwort and polypody, do well. One year we succeeded with the rue spleenwort or wall rue; probably the moisture and shade were just what it wanted. Then first, last, and always, there is the partridge berry, and the best use to which one can put the small globes of these plants sold by florists is to remove the contents to the larger garden.

New York. H. M. S. and F. M. S.

Parsnip fritters — easy to make and very good to eat

## Recipes for Good Things

THE following are my favorite ways of preparing "old reliables."

*Scalloped Onions:* Boil onions in salted water for forty-five minutes, then drain and cut in quarters and arrange in a batter baking dish. Have cracker crumbs rolled very fine; put a layer in the bottom of a porcelain dish and cover with a layer of the cut pieces of onion, with batter, pepper and salt. Alternate the layers of onions and cracker crumbs until the dish is filled. Bake in a moderate oven for about fifteen minutes. A pretty garnish for this dish consists of rings of onion filled with chopped gelatine, which has been tinted pale green with vegetable coloring and flavoured slightly with onion juice and parsley.

*Parsnip Fritters:* Cook parsnips in salted water until tender; then plunge into cold water and rub off the skins. Mash fine, season to taste with salt, pepper and butter and form into small cakes. Dredge with flour, stew in butter, and serve hot with a garnish of parsley.

*Fried Potatoes:* Pare good-sized potatoes and slice thin into a bowl of cold water. Cut into squares, drain on a clean towel and fry to a nice even brown in sufficient hot butter or drippings to cover them. Drain on brown paper sprinkle with salt and pepper, and serve very hot.

*Creamed Carrots:* Scrape the carrots and boil in salted water till tender. Drain, cut into dice, and add one cup of canned peas that have been heated thoroughly. Moisten well with a white sauce made of two tablespoonfuls each of flour and butter, two cups of rich milk and seasoning to taste.

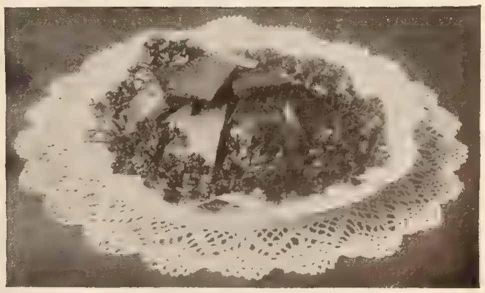
Massachusetts. Mary H. Northend.

## How to Dye Lace

THE method followed by modistes when dyeing lace to match a gown is to purchase tube paints at any art store, together with a list of combinations for colors not primary or not already mixed. A small quantity of the shade desired is added to gasolene, until by trial with a patch or end of the material the tint is secured. Then the article to be dyed is immersed. Care must be taken to keep away from fire or flame of any description. This method gives quick results, and beautiful colors and tints are more easily obtained than in any other way. — E. F., Penna.

Scalloped onions — an easy way to make this common vegetable really delicious

Carrots and peas creamed together and garnished with parsley


Potatoes cut into squares and fried — a change from the every-day French-fried potatoes

# Readers' Service

TO SUPPLEMENT the magazine itself we have established the Readers' Service, by which the whole organization of the staff of experts, with whom the editors of the magazine are in touch, is brought right to the door of the individual reader. All that is necessary for the reader to do is to send an inquiry by mail, and every effort will be made to give a complete and satisfactory answer — by return mail, if possible — or, at all events, to put the inquirer in the way of getting the knowledge sought. Only answers of general interest will be published here.

This special service has been of real value to many readers, as dozens of letters testify. And it is all available to every reader of THE GARDEN MAGAZINE upon request and without expense (although a stamped and addressed envelope for reply is appreciated). Through this service each reader of THE GARDEN MAGAZINE, therefore, has the advantage of the most expert advice that the editors of the magazine can procure.

There are some things we cannot do. We cannot, for instance, undertake work that properly belongs to expert professional service. We cannot supply plans for garden design or for garden making or for buildings, because this really requires intimate knowledge of the special conditions and a personal inspection; nor can we make complete planting lists for individual purposes. We are, however, in such cases ready to give references to people who we think could adequately serve the inquirer.

We are always ready, however, to answer specific questions and to make suggestions regarding garden designs or planting plans that may be submitted to us. Address all inquiries to The Garden Magazine Readers' Service, Garden City, Long Island, N. Y.

### Left-over tulip bulbs

What can I do with 200 tulip bulbs left over from last fall's planting?— W. J. S., New York.
— The only thing you can do now with your bulbs is to plant them in flats, giving them a lot of heat, and thus force them into flower.

### To follow sweet peas

I have five rows of sweet peas and want something to plant in their place after they have gone. Can dahlias be held back for July planting? Or can they be cut back and transplanted at that date? — W. A., New Jersey.
— We would suggest the transplanting of China asters to each side of the sweet pea rows. Dahlias are safely planted the first week in July and personally we prefer that time for doing the work. We prefer not to cut them back if planted so late.

### Liming the soil

With what quality of lime do you place the refuse from acetylene gas machines in which carbide (calcium carbide) is used? Should it be applied to sour land in larger quantities than ground lime? — F. M. O'B., New York.
—The sediment from acetylene gas machines is practically the equivalent of slacked lime, and is subject to the same precautions in its use as a land fertilizer. Applied in a thin coat it proves very beneficial to many kinds of soil. On heavy soils it may be applied at the rate of from twenty to forty bushels per acre.

### Planting peach trees

I expect to plant about one thousand peach trees this coming spring and of course desire to get nursery stock that is free from yellows. I understand peaches grown south of the Virginia-Carolina line are free from this disease. Has this been your experience? Some of the northern nurseries claim that southern-grown peach trees will winter-kill in the north. Would there be much trouble from that source here in Southern Pennsylvania, six miles north of the Mason-Dixon line?— S. A. H., Pennsylvania.
— It is our experience that the liability of the peach yellows is not a question of original stock, as much as the conditions under which the trees grow. Trees that have grown in a region where peach yellows is unknown easily fall a victim to the disease if planted in a locality where it is prevalent. We have never before heard the statement made that peaches grown south of the Virginia-Carolina line are free from this disease, and we hardly think it is true. The whole thing, it seems to us, is a question of adaptation of relationship of North to South and South to North, and this has been a subject of considerable debate. In the International Conference of Plant Hardiness and Acclimitization it was pretty clearly shown that the inherent resistance of the given plant could not be modified by changing its environment. Consequently, we cannot consider southern stock less hardy than northern stock. The southern stock may be more susceptible to climatic injuries in the North when brought north, because of the sudden changes in condition. In other words, it might be suddenly exposed to what would be equivalent to an extreme drop in temperature. We do not think you will have any trouble in bringing peach trees from the South to Southern Pennsylvania if they are in a dormant condition when brought north, and if the conditions of the two places are nearly on the same level.

### Privet and grass

Will grass grow close to the roots of privet? If any, what are the unpleasant features of a privet hedge?— J. McG., Michigan.
— Grass will grow close to the roots of California privet except where it is prevented by actual shade. An unpleasant feature of the privet is its liability to occasionally winterkill down to the ground. Also the color of the foliage is a yellowish-green and there is the necessity of constant shearing in order to keep the hedge trim; it grows very rapidly.

### Cherry tree borer

In my garden there is a sweet cherry tree about ten years old, which bears every season less than a quart of fruit. A sticky substance oozes out from many parts of the tree; when these spots are opened and examined it is found that the bark is eaten away right to the heart of the tree. Invariably numbers of large black ants are found in each soft spot. What ought I to do with such a tree? — W. J. B., Pennsylvania.
— The tree has probably been attacked by borers and it will only be a question of time before it fully succumbs. Cut it down and plant a new one. If you really want to try to save it, however, thoroughly fertilize the ground around it, prune the tree carefully, clean out all the diseased holes, and inject in each of them a drop or two of carbon bisulphide. Whitewash the whole trunk. The gum which oozes from the tree is a natural secondary product.

### Non-blooming wistaria

I have a wistaria vine about nine years old that is making a marvelous growth each year of wood and tendrils, but blossoms practically not at all. Two years ago, it produced a few rather small flowers and once before that it blossomed a little more profusely. When a young vine it was enriched very freely, but has not been since we suspected the strength was going entirely to wood. Can the vine be made to bloom satisfactorily?— M. F. T., New York.
— There are several possible reasons why a wistaria vine does not bloom. The vine may be in an unfavorable situation, or the buds may be injured by a combination of sunshine and frost in the spring. Then again, the failure to bloom may be due to too excessive growth. Careful root pruning might check this, but it is a dangerous thing for an inexperienced person to try. Possibly a dressing of wood ashes would help. Is there any opportunity of restricting root growth? There is the possibility that the roots are running away to a rich soil somewhere else.

### Begonias in porch boxes

What can I use in large quantities in porch boxes that will be shaded by an awning all summer? If begonias were slipped now would they be ready to put outdoors in spring?— E. W. S., Massachusetts.
— If you want begonias for your purpose use the Erfordi begonia. If you have a greenhouse you can grow it from cuttings, which if struck this month (February) will be ready for putting outdoors in two or three weeks. They are usually raised from seed, which is the easiest and cheapest way. If you buy the plants in flats you can get them for less than three cents each; but potted up they will cost from five to ten cents per plant.

### Plants for wet places

What flowering annuals or perennials, that will grow from two to three feet high, can I plant along the banks of a stream of brackish water on supposedly fertile land which was thrown up out of the river-bottom? The plants will have to withstand very "wet feet" and an occasional flooding when the stream is high. Will any treatment of the soil be necessary?— J. B., New Jersey.
— In all probability the turned-up soil is not really fertile but only potentially so, and will need composting. For information regarding soil conditions write to your state experiment station at New Brunswick. As to the plants, you will have to be content with aquatics and sub-aquatics, such as bullrushes, swamp mallow, horsetail rush and wild flag. We do not know of any annuals that can be recommended for such a situation.

### Time to prune shrubs

What is the proper time to prune rambler roses, wistaria, hydrangeas and lilac bushes? How are they pruned, or what is the distance to cut them from the main stem?— A. G. H., New Jersey.
— In pruning rambler roses cut off in the spring, before the buds open, from one-fifth to one-third of the previous year's growth; also, in established plants, any of the old, flowering wood which is enfeebled. Do not hesitate, even if a part of the trellis is laid bare. It is only by this method that these plants can be kept vigorous. In summer take out most of the old wood after it has finished flowering and train new growths as desired, pinching out weak and objectionable shoots. *Hydrangea paniculata* and *hortensis*, and also most of the other species, should be pruned in the fall or the early spring, and the branches of the previous year cut back to one to three pairs of buds, according to the growth of the branches and the desired size of the panicles; if only slightly pruned the panicles will be many but small. Sometimes they are cut back every year almost to the ground and produce then enormous panicles, which, however, usually need artificial support and lack the grace of the less severely pruned plants. After blooming, the inflorescence of the lilac should be removed if possible and the pruning should be done as far as necessary. Pruning in the winter or spring would destroy a large part of the flower-buds for the coming season.

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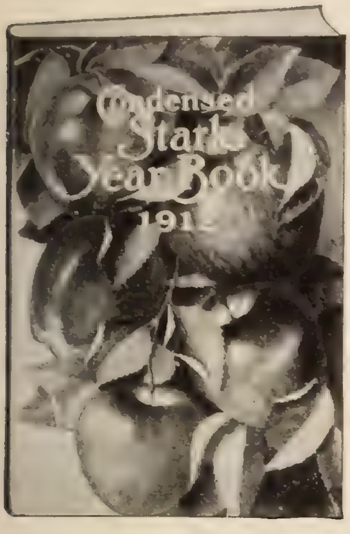

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# THE SMALL GREENHOUSE

## The Year's Calendar for Flowers in the House Conservatory

January. During the month, bring up the later-blooming (pink and light blue) Roman hyacinths, and White Italian hyacinths for forcing. Look over the pots of exhibition hyacinth, and bring up any that are ready to be forced. Consult your conservatory note-book carefully, noting the past year's successes and failures, and make your plans for the coming year. If you are planning to occupy the house during the summer, you have the problem of the conservatory's attractiveness during the summer months to consider. I have solved this, by ordering early in January, 150 bulbs of tuberous begonias. I buy a mixture of all types and colors, and bought in so large a quantity, they make a most inexpensive, as well as satisfactory display during the entire summer and fall. Gloxinias, or other summer-blooming bulbs, would doubtless do equally well.

Flowers in blossom in January are: Freesias, primroses in variety, Gloire de Lorraine and gracilis begonias, nasturtiums (just beginning) white Roman hyacinths, earliest exhibition hyacinths, geraniums, and Impatiens.

February. Bring up any of the crocus, large trumpet narcissus, or jonquils for forcing. Also late exhibition hyacinths. Start sprouting twenty-five or so of your tuberous begonia bulbs, in pans of wet moss. When sprouted, so that you can be absolutely sure which is the top and bottom of the bulbs, plant the bulbs among your primroses, scattering them widely over the whole conservatory. Send in your order for primrose seeds for next year's plants.

Flowers in blossom in February are: Freesias, primroses in variety, pink and light blue, Roman hyacinths, white Italian hyacinths, nasturtiums, begonias, exhibition hyacinths, geraniums, Impatiens.

March. Bring up any remaining bulbs of the above-mentioned varieties for forcing. Sprout and plant another instalment of tuberous begonias. Keep all faded flowers well picked off from blooming plants. Put boxes of forced, large trumpet narcissus in a cool corner of the cellar for ripening. Do the same with crocus. Gradually withhold water until the tops turn yellow. Then cut off the tops, dig up the bulbs, and put away for planting in the garden later in the spring. These are the only bulbs that I consider worth the bother of saving. The others do not repay the labor spent on them.

These flowers are in blossom in March: primroses in variety, Gloire de Lorraine and gracilis begonias, nasturtiums, crocus, large trumpet narcissus, jonquils, exhibition hyacinths, petunias (just beginning), geraniums, Impatiens.

April. If you have bulbs of gladioli, late tulips, Spanish iris, etc., now is the time to start forcing them. They will not succeed if forced earlier. Plant primrose seeds in shallow pans or boxes, barely covering the seeds with fine sand. As so few seeds come in each packet, I find it best to take the trouble to space them carefully and plant them one by one. It takes more time at the outset, but saves a great deal of labor and uncertainty later. At the time of sowing, keep a record of the date, number of seeds, and names of varieties. Finish sprouting and planting tuberous begonias. Begin pulling up any old primrose plants that are getting unsightly or scanty in blossom. They are not worth keeping for another year, as they seldom do well, and

# Burpee's Annual for 1912

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require great care. Any special or unusual colors or forms you may desire to save, may be spared for setting out in the summer.

The flowers in blossom in April are: primroses in variety, Gloire de Lorraine and gracilis begonias, late bulbs in variety, nasturtiums, petunias, geraniums, Impatiens.

MAY. Finish removing old primroses. Primrose seeds should be up early in the month. Keep seedlings out of hot noon sun, and keep moist, not wet. At the end of the month, cover the windows with sheets of thin blue tissue paper pasted to the glass. This tempers the hot sunlight, and is necessary for the comfort of the tuberous begonias. Give the conservatory plenty of air, keeping the windows open whenever possible.

Flowers in bloom in May are: Begonias, gladioli, Spanish iris or other late bulbs, petunias, nasturtiums, geraniums and Impatiens.

JUNE. By this time the tuberous begonias should have begun to blossom. Stake all that need it, with the slender dark green florist's stakes. Dig a spoonful of bone-meal around each bulb. Plant out in the garden, in a shady spot, all begonias, geraniums, petunias, Impatiens, etc. Prepare long, narrow, shady beds with well-fined soil, and plant out your seedling primroses. They should be in complete shade, and should be set four inches apart. Mark position of special varieties or colors.

The flowers in blossom in June, July, and August are: Nasturtiums and tuberous begonias.

JULY. Keep the soil well stirred around seedling primroses. In dry season water every evening. Fertilize scantily with bone meal. Keep tuberous begonias well watered and soil enriched. Sow seeds, out of doors, of any annuals you wish to try next winter in the conservatory.

AUGUST. Take slips of geraniums, petunias, Gloire de Lorraine and gracilis begonias, Impatiens, etc., for the winter's blooming. A flat box, filled with damp sand, set in a moderately sunny corner of the yard, and covered with a sheet of glass makes a good propagating box. As soon as the slips begin to grow, give air for several hours a day. Old plants of primroses, set out in June, should be divided into two or three little plants, and reset.

SEPTEMBER. Pull up the old nasturtiums that have been in the conservatory all the year, and plant new seeds. See that your winter bulbs are planted, and stored in the cellar by the middle or end of the month. Plant slips of geraniums and other plants in the conservatory benches. Plant seedling primroses in their winter positions, mixing the colors, but keeping the varieties separate. The tuberous begonias will still be in blossom, but the young primrose plants can be planted among them. Pull up any tuberous begonia bulbs that are through blooming. Start polyanthus, and Chinese sacred narcissus in bowls of water. Start freesias in pots or boxes in full light. Remove blue tissue paper from the windows.

The flowers in blossom in September are: Tuberous begonias in variety, and a few Impatiens.

OCTOBER. Pull up bulbs of tuberous begonias that are through blooming. Bring in and plant divided plants of the old primroses you saved from last year. Bring in any annuals you wish to experiment with. Dig bone meal around all plants. Keep a watch for aphis and red spider.

Flowers in blossom in October are: Tuberous begonias, polyanthus narcissus, Chinese sacred narcissus, geraniums, and Impatiens.

NOVEMBER. Train young nasturtium plants carefully on trellises. Pull up last tuberous begonias. The tuberous begonia bulbs should be dug up carefully, and planted in boxes of earth in the cellar. Water should be gradually withheld until the tops have turned yellow. Then the bulbs may be dug up and stored in dry sand, in a cool place for the next year. They can be used year after year if care is taken in storing. Cultivate primroses.

Flowers in blossom in November are: Polyanthus narcissus, Chinese sacred narcissus, geraniums, Impatiens.

DECEMBER. Bring up white Roman hyacinths for forcing. Watch out for insects; do the regular greenhouse work of watering, fertilizing, etc.

The flowers in blossom in December should be: Primroses in variety (just beginning), freesias (just beginning), Gloire de Lorraine and gracilis begonias, Impatiens, and geraniums.

New Hampshire. MARTHA H. CLARK.

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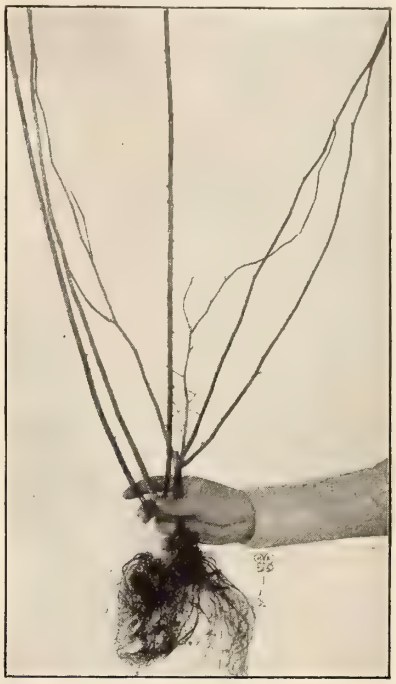

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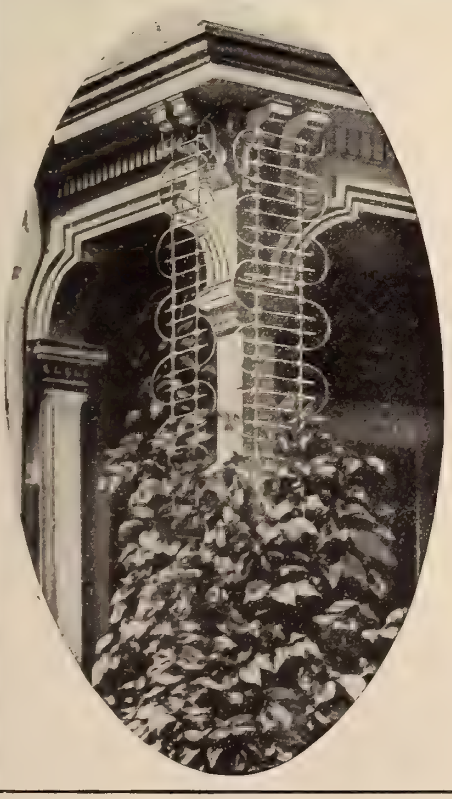

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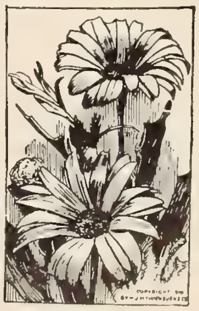

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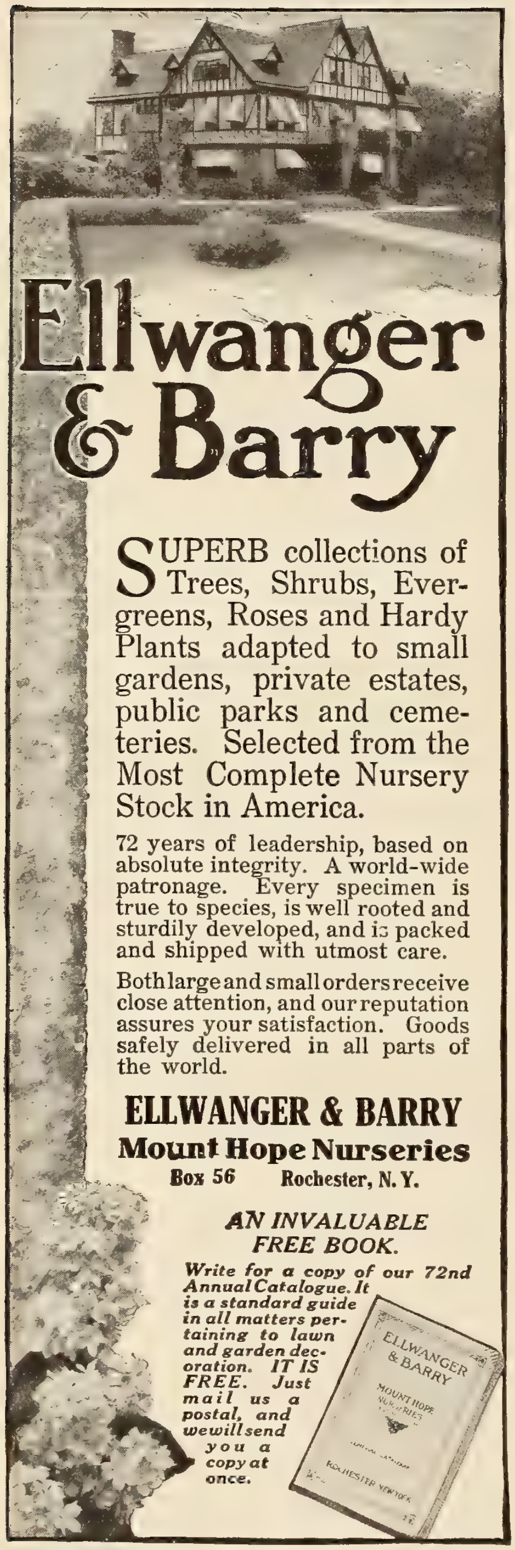

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***Write for a copy of our 72nd Annual Catalogue. It is a standard guide in all matters pertaining to lawn and garden decoration. IT IS FREE. Just mail us a postal, and we will send you a copy at once.***

**FERRY'S SEEDS** Good gardeners are those who raise good flowers and vegetables. Good flowers and vegetables come from good seeds. We produce good seeds—the inference is obvious. For sale everywhere.

**1912 SEED ANNUAL**
**Free on Request**
**D. M. FERRY & CO.**
**Detroit, Mich.**

## A Miniature Greenhouse for Sweet Peas, Corn, etc.

TWO years ago, I made a miniature greenhouse for raising early sweet peas. I was very successful, and there was practically no work connected with it.

There is a sheltered, sunny, southwest corner, in our garden between the kitchen step and the dining room windows. In the fall this was spaded and well fertilized; then we sunk into the ground a 12-inch plank on edge about eighteen inches from the house, leaving it two inches above ground. This made a trench that would hold water and the board formed the front support for the glass.

Early in February the seed was planted; I procured the re-selected Extra Early Blanche Ferry, and Burpee's Earliest White. After planting, I took panes of window glass and slanted them from the outside board to the side of the house. The sun shining on the glass, and reflected against the white house made the warmest, most sheltered spot one could imagine! The seeds germinated readily and the plants grew steadily. As the days became warmer I removed the glass occasionally, but did not remove it entirely until the plants were so high that there was danger of the glass burning the leaves. My sweet peas were in bloom at least six weeks earlier than those of my neighbors.

Both grandiflora and Spencer varieties for transplanting were also started here. I made small pots of tough water-color paper two and one half inches high and two inches in diameter. In each pot, I planted two seeds and placed all the pots in two large shoe boxes in a cool, light, store room. When the pots were filled with roots, I placed four of the paper pots in a pound coffee can filled with rich soil, and let them grow this way until the weather was settled enough to plant outdoors. I planted the peas from each pot in a clump by itself, about one and one half feet apart. Those made remarkably strong growing plants much stronger than any that I have ever planted directly out-of-doors and much earlier flowering also.

I had such success with my sweet peas in paper pots that I tried sowing early corn and cantaloupe in the same manner. I had had much trouble with my early corn seeds failing to germinate, so I entirely avoided this by using the paper pots. I bought Earliest Catawba corn, which is a dwarf variety, and planted twenty small pots, 3 kernels each, putting them in the garden when the shoots were about two or three inches high. I had green corn about the middle of July, which is much earlier than I had ever grown it before.

I planted melon seeds in small pasteboard boxes (the lower part of corn meal packages cut about four inches high). When I put them out in the garden, I cut out the bottoms but left the sides of the boxes on, as they protect the roots from cut worms. This spring our entire planting of melons, except those in the boxes, was eaten by worms.

Idaho. Mrs. E. H. Plowhead.

## Plant Sugar Cane Now

SOUTHWARD, from Macon, Ga. and Dallas, Tex., one may risk planting a few early bush beans, sweet corn, squashes and melons, for only a light frost is likely to occur in that section after the first of February. And these vegetables can easily be protected with newspapers should a heavy frost threaten.

In this section be sure to plant some sugar cane. Lots of people like to eat it. The stalks for planting can be bought for one dollar to one dollar and fifty cents a hundred, and are usually from two to six feet in length. Sugar cane requires a rich, moist soil. Never use manure as it gives a salty taste to the cane; cotton seed meal, or fertilizer and cotton seed, is best for cane. Apply liberally, so as to get long stalks. Red cane is hard but very sweet; in fact, it is the sweetest of the three types. Green cane is very soft and is used mostly for chewing; ribbon cane is striped red and green. It is also very hard and, like red cane, is used mostly for making syrup.

Sweet potatoes should be bedded during the last half of the month, or if you have a glass with which to cover the bed, they should be planted at once. Select sound tubers for bedding.

**GREGORY'S HONEST SEEDS**

GREGORY'S HONEST SEEDS

You ought now to be making plans for the spring planting of your flower and vegetable gardens. You want seeds that grow; that produce higher quality crops. Your surety of this is in buying from a house founded on honor — a house that sends out seed so dependable that "Honest Seeds" has become its trade mark.

We are offering a special flower collection, 90c. worth postpaid for 25c. in coin or stamps. It will prove the dependable quality of our seed.

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| Sweet Peas, Extra Choice Mixed | 5c. |
| Total | 90c. |

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**WE SELL DIRECT TO THE CONSUMER**

We have no agents or solicitors. We save you all middlemen's profits. You get absolutely the best trees money can buy at one-half what agents ask.

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**Tomato, M. H. B. & Sons' Stone.**

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Remember these are not sample packets but regular, full size packets which would cost 30c. if purchased at any seed store. You should send for our catalogue anyway as it is entirely new and the finest garden book we ever issued. We will mail a copy free to all interested in Reliable Seeds. Be sure and send to-day.

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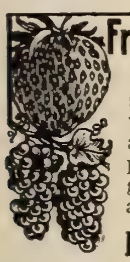
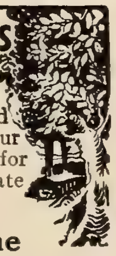


## Fruits, Trees and Flowers



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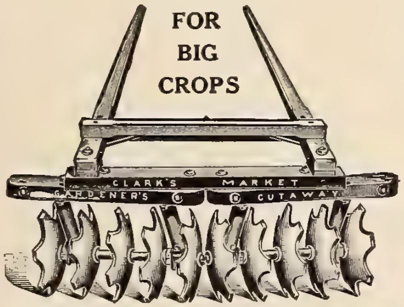

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About Your Roses And Our Kind of Perpetual Rose Garden

WHAT a pity that your outdoor roses last but one short month. Those you buy in the flower shops somehow fail to give the genuine pleasure that those you grow yourself do. You don't have that same delightful friendliness for them. They seem to lack something. Haven't you often longed for a greenhouse where you could have a perpetual rose garden — a garden filled with blooms from September till June? Have you ever talked it over with us?

Perhaps you have an altogether wrong idea of their expense. Perhaps you don't know the wonderful possibilities of one of our indoor gardens. Perhaps you think it means the usual vexatious building troubles — and disappointments. Perhaps you are wrong on every one of your "perhaps". One of our representatives will come any time you say and gladly talk the "perhaps" over with you. Who knows but he may be able to suggest the happiest kind of a happy solution. The greenhouse in the illustration is attached to the garage. You may be able to do the same with yours.

Then there's our catalog—you may prefer to see that before you see any of us. Let us know.

A house ordered now can be completed in time so your plants will be in bloom in the early Fall.

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Brighten up the deep, shady nooks on your lawn, or that dark porch corner — just the places for our hardy wild ferns and wild flower collections. We have been growing them for 25 years and know what varieties are suited to your conditions. Tell us the kind of soil you have — light, sandy, clay — and we will advise you.

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will give the charm of nature to your yard. These include not only hardy wild ferns, but native orchids, and flowers for wet and swampy spots, rocky hillsides, and dry woods. We also grow such hardy flowers as primroses, campanulas digitalis, violets, hepaticas, trilliums, and wild flowers which require open sunlight as well as shade. If you want a bit of an old-time wildwood garden, with flowers just as nature grows them — send for our new catalogue and let us advise you what to select and how to succeed with them.

**EDWARD GILLETT, Box C, Southwick, Mass.**

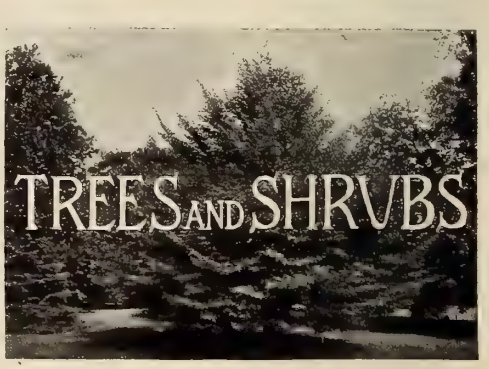
If you have not yet sown pansy seed, do so at once, so as to have pansies this spring.

Sow seed of sage, horehound and other herbs; also in the open seed of cabbage and cauliflower.

Plant out dahlia roots and prune rose bushes and fruit trees at once, before they begin flowering. If the fruit trees are to be sprayed, do it at once, before the buds begin to swell.

The fig, one of our most delicious fruits, should have a place in every Southern fruit garden. Plant out the bushes now on a southward slope of a hill or south of a building, so that the trees will be more or less protected during very cold winters.

Georgia. Thomas J. Steed.



## The Bronze Birch Borer

THE bronze birch borer has destroyed many silver birches in the western part of New York State and has begun to be destructive in the eastern section. A serious difficulty in controlling this insect is that the trees are usually beyond help before any injury is suspected. The borer is a rather stout, olive brown, tapering beetle about half an inch long. The eggs are deposited just under the bark and the borers literally girdle the tree by running numerous interlacing channels through the inner bark and sapwood. Frequently a series of rather well marked annular ridges may be observed on infested limbs. The destructive grubs complete their growth in early spring, and the beetles emerge early in June. The best remedy is the rigid cutting out and burning of all infested trees prior to May 15th. E. P. Felt.

## February Work Among the Trees

*Removing the undesirables.* In the October, 1911, issue of The Garden Magazine it was suggested that you mark the dead and crowding trees as well as the trees that were badly infested with insects or disease. See, now, that these trees are removed from the premises before the busy spring season and before injury results to the nearby trees.

*Tree planting.* The frost will soon commence to leave the ground and you may want to plant some trees. If you have not already procured them, now is the last chance to get your choice in the nursery. Decide where you wish to plant, how many plants you need and what kinds. The following lists give the more desirable species to select from:

*Trees for the lawn.* American elm, European silver linden, European linden, pin oak, European copper beech, Soulange's magnolia, European white birch (weeping var.), flowering dogwood, ginkgo, Kentucky coffee tree, sweet gum, Oriental spruce, Colorado blue spruce, Austrian pine, Bhotan pine.

*Trees for screening.* Hemlock, sassafras, osage orange, mulberry.

*Trees for the street.* Oriental sycamore, Norway maple, red oak, ginkgo, European linden, English elm, American elm, pin oak, red maple.

*Trees to be avoided.* All poplars, silver maple, sycamore maple.

*Preparing to spray.* In the latter part of May, after the caterpillars have made their appearance or after the elm leaf beetle has started perforating the leaves, it is too late to start preparations for combatting them. March is the time to think of your spraying apparatus, material, and labor for doing the spraying. A good barrel pump raised on wooden wheels, with two lengths of 50-foot hose, two bamboo rods and some vermorel nozzles, will complete the outfit. Arsenate of lead containing

**Suggestion No. 1 From the Advertising Suggestion Department**

Photograph, pencil, pen or brush illustration ideas, border arrangements, typographical display, text matter and other advertising suggestions are furnished free by this department to old and new and prospective advertisers in GARDEN MAGAZINE.

This service enables our patrons of the advertising columns to reach our patrons of the reading columns by a route of sure approach. This "Open Sesame" is *advertising* that conforms as much as may be to the general taste of the readers of that magazine in which it is published. Being on "The Inside," we are able to suggest how our readers may be best interested in your product.

This service is entirely supplementary to that of those who have regular methods of handling their advertising. It is a primary service to those who have not regular publicity systems of their own, or at their command. So if you contemplate taking advertising space in any of our publications, and desire our assistance, it is yours on request. Write, giving full particulars and descriptive literature, to Jay Vee Lamberton who runs

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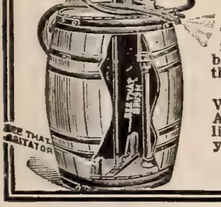

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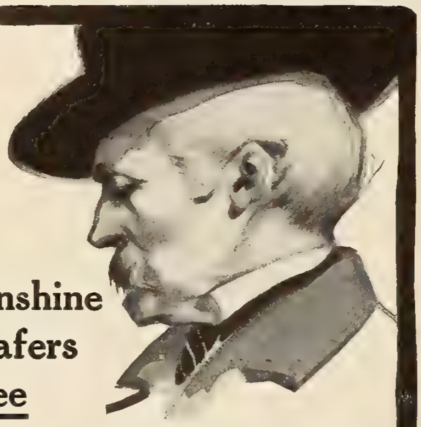
**BRIGHT LIGHT CO.** **Dept. 49, Grand Rapids, Mich.**



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**Toasted Whole Wheat Wafers**

are as thoroughly wholesome as they are good to eat. Just the things for the evening "bite" and the between-meal lunch—or to put in your grip when you travel. When once you've tasted them you'll think of a score of uses. The one biscuit that is liked as well by men as by women and children.

***Send a Postal for Samples***

Give your name and address and the name and address of your grocer. Ask your grocer for Sunshine Toasted Whole Wheat Wafers—they are one of the Sunshine Specialties, the Quality Biscuits of America.

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THE HOME CORRESPONDENCE SCHOOL

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at least 14 per cent. of arsenic oxide will give you a satisfactory material to spray with.

*Fertilizing.* This is also a good time to fertilize some of the weaker specimens on your lawn. Well rotted cow manure makes excellent fertilizing material for almost any purpose. A tree that needs this treatment should have the soil dug around the trunk to a distance equal to the spread of the branches, and a 3-inch layer of manure well mixed with the soil. You can then put the sod back again, leaving an opening about two feet in radius around the trunk of the tree.

*Watching for scale insects.* In the case of several species of scale insects the young will soon begin to hatch and the insects then become most susceptible to treatment. Examine your trees for scale insects; willows, poplars, lindens, horse-chestnuts are especially attractive to these insects and if you discover any evidence of their presence, send a sample of the infested wood to your State Agricultural Experiment Station and ask for specific advice.

New York. J. J. LEVISON.

ROSE
DEPARTMENT

## The Good Points of Standard Roses

IN THE issue of THE GARDEN MAGAZINE for November, 1911, appeared an article entitled "Are Tree or Standard Roses Any Good," signed Thomas McAdam. With the article is published an old photograph of a small bed of standard roses in my garden at Rochester, N. Y.

The rose bed shown in the photograph was established about five years ago and generally blooms all summer long, with a good succession of beautiful crops, until frost. Therefore, there is *sense* in standard roses. They are not "unsightly," nor do they "give a feeling of weakness, poverty and pretense," as Mr. McAdam states. Quite the contrary. They generally offer a series of beautiful, fragrant bouquets on graceful stems and trim supports. Apparently Mr. McAdam has had in mind the misnamed Hybrid Perpetuals which, whether in standards, bush or dwarf, bloom practically only once a year and are perpetual chiefly in the memory. The wonderful new Hybrid Teas and some of the old Teas are very different and will repay their care, in whatever form they are used.

The advantage of fine standard roses for use here, as well as in Europe, are many. Also, as there are many varieties of roses, so there are many kinds of standards. The English standard, on which the various roses are grafted, is one thing; the Dutch standard is another; the French and German are different again. It is the wise rosarian who knows which is the most successful in his locality and how it may be used most advantageously and cared for most properly and simply. No rose of any kind, worth looking at or smelling of or speaking of — not even a wild rose or a briar — but calls for care and attention. Insects, bugs, worms, sun and rain, frost and mildew — all must be fought and guarded against.

A bed of standard roses for the small garden offers this great advantage: It is easy to cultivate round the roots of the plants and easier still, without back-breaking, to spray their heads, to prune out weak shoots and dead wood, and generally, to keep the plants clean and healthy, trim and tidy. They are eminently the roses for a rosarian or for a woman's loving care and attention and their preservation over winter is a simple gardening "chore" for those who know how.

New York. W. D. ELLWANGER.

**Write for Free Book About the New Way of Spraying**

This book tells about the new tested ways of spraying—how to banish blight, disease, prevent the ravages of insects, in less time, with less work and half the solution generally needed. It tells what to spray and how to get the best results.

**Brown's Auto Sprays**

Made in 40 styles and sizes—**Hand and Power Outfits** to meet the needs of *every* man and work on new, *improved* principles that save time, solution, trouble and mean *thorough* results. 300,000 fruit growers, farmers and gardeners and leading experiment stations everywhere endorse Brown's Auto Spray.

*See Auto Spray No. 1*—4 gal. capacity, hand power with non-clogging nozzle that throws every kind of spray, easy to carry over shoulder, needs least pumping, enables boy to outwork 2 men with ordinary outfits. *Power Sprayers* of every style and capacity for every purpose — fitted with Brown's

**Non-Clog Atomic Nozzle**

the greatest time and money saving invention of the kind in years. Positively will not clog — adjustable from fine mist-like spray to powerful stream — absolutely self-cleaning. Low prices, satisfaction or money back.

Write for Spraying Guide Free and full particulars.

**THE E. C. BROWN CO.**
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A Mess of fresh **Mushrooms** at all seasons Growing in your Cellar

**40 cts.** in postage stamps together with the name of your dealer will bring you, postpaid, direct from the manufacturer, a fresh sample brick of

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the best high-grade spawn in the market, together with large illustrated book on **Mushroom Culture,** containing simple and practical methods of raising, preserving and cooking mushrooms. Not more than one sample brick will be sent to the same party. Further orders must come through your dealer.

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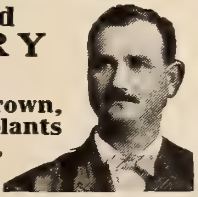

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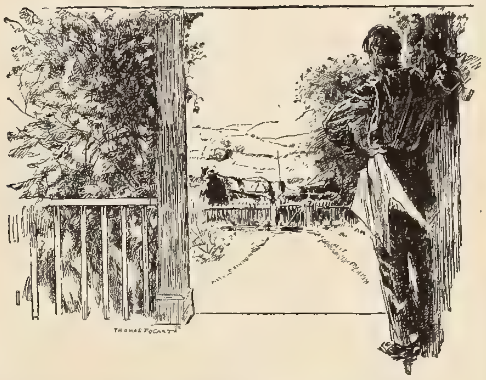

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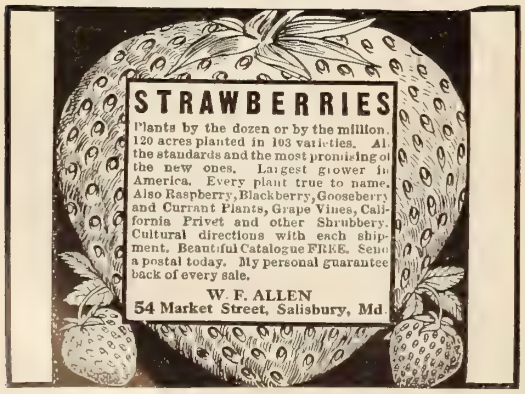
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## Varieties of Sweet Peas

THE improvement in sweet peas has been so rapid within the last few years, so many new varieties being introduced each season that an acquaintance with varieties becomes of some importance. In the following list I name those that I have proven to be of outstanding merit. There can be no question as to the superiority of the new Spencer type, over the plain standard or grandiflora class; the flowers of the former are much larger, the standard and wings being most attractively crimped and waved, while they also produce a large percentage of three and four flowered sprays.

The first of this magnificent type — Countess Spencer — was introduced in 1904. The color of Countess Spencer is a soft rose-pink, rather deeper toward the edges, and must be included in all collections. Florence Morse Spencer (to be found in some catalogues under the names Mrs. Hardcastle Sykes and Princess Victoria) is a beautiful blush pink. Mrs. Hugh Dickson is a rich pinkish apricot, the ground color being cream, and is one of the earliest and most continuous flowering Spencer varieties in cultivation. The color combinations to be found in Constance Oliver are exquisite, being creamy yellow suffused with rose-pink throughout, though rather deeper in tone toward the edges of the petals.

The finest whites are White Spencer and Nora Unwin.

In crimson there is still nothing to eclipse King Edward Spencer, though the new Vermilion Brilliant is brighter, almost approaching scarlet.

George Herbert (synonymous with John Ingman) might be termed the giant of the family, as it overshadows all in size of flower, five on a stem being often found when well grown; the color is rich rosy carmine. Marie Corelli is a very fine rose. In primrose or cream colored varieties Primrose Spencer still leads the way, and in creamy-buff Queen Victoria Spencer.

Of the pale blues or lavenders — Flora Norton Spencer has so far been supreme, but may now be eclipsed by the new Margaret Madison. Florence Nightingale has proved to be the largest and purest true lavender, although it has a strong rival in Asta Ohn. In the deep maroon class Othello Spencer easily leads the way, and in mauve or heliotrope Tennant Spencer. Helen Lewis — one of the earliest selections from Countess Spencer, has so far been the best bright orange-colored variety but it is now closely pressed by Thomas Stevenson a rich, glowing orange introduced in 1911. The brightest and richest colored variety in my opinion is found in Stirling Stent, the color being rich salmon, a great recommendation being its non-scalding qualities. Earl Spencer is another fine salmon rather lighter in color than the former and with flowers of better size.

In the picotee-edged section Dainty Spencer (syn. Elsie Herbert) white edged rose, and Mrs. C. W. Breadmore (Evelyn Hemus) cream edged rose are well worth including in any collection, and the same may be said of Martha Washington (synonyms Eric Harvey, Marchioness of Tweeddale and Paradise Apple Blossom) in the younger stages it appears to be picotee edged, but the flower is gradually suffused with rich rose as it attains maturity. In addition I like Mrs. Routzahn — apricot or buff suffused soft rose; America Spencer, white striped with reddish-crimson; W. T. Hutchins, apricot suffused blush-pink; Senator Spencer, pale heliotrope flaked chocolate and a large attractive flower; Waverly Spencer rosy-purple; Lovely Spencer, an exquisite shade of pink, in color midway between Countess Spencer and Florence Morse Spencer.

The foregoing list comprises only waved varieties and to it might be added the following of the plain standard type: Helen Pierce, white marbled bright blue; Brilliant Blue, rich dark navy blue; Zarina, salmon pink; Rose du Barri, terracotta (bright scarlet under artificial light) and Dorothy Eckford, solid ivory-white.

### INSECT PESTS

In some localities the cut worm plays havoc with the young vines, and as a remedy there is nothing better than soot, dusting this around the plants, freshly slaked lime placed on either side

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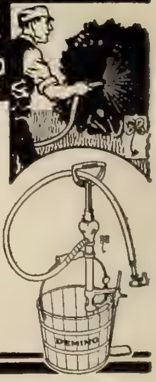
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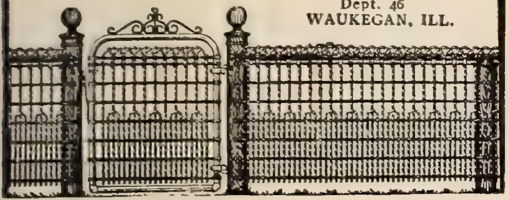

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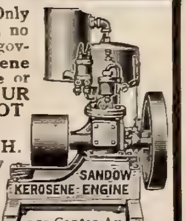

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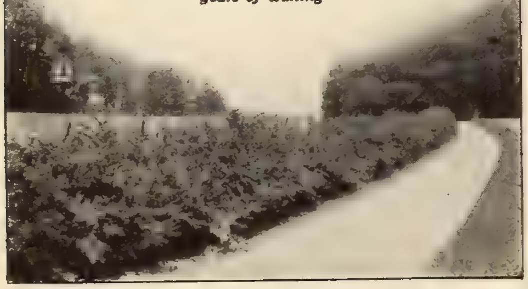

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of the row will also keep them in check or the plants might be dusted with tobacco powder and I have often resorted to hand picking. The pea louse, or green aphis is, however, the worst foe the grower has to contend with, the hot dry days of early July being generally accompanied by a visit from our green enemy. I have found the free use of kerosene emulsion the best remedy, the affected vines being given a thorough spray every second or third day, alternating with a spray of clear water.

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For the
PACIFIC
COAST

## A Hotbed Any One Can Make

TO OBTAIN a full measure of enjoyment out of gardening, one must have some sort of a greenhouse or hotbed. Generally speaking, the former will, of course, give the best results; but it is not every person, at least of the amateur class, who can afford the luxury of a glass-house in which to raise plants. Yet such a place may be very cheaply constructed; even then, however, there may be times when a hotbed, with one or more glass-covered frames, will be a necessity. I found myself in this position a few years ago. I did not care to utilize the hot-water heating apparatus of the greenhouse, so determined to have a small hotbed; we had had large ones and the big frames and beds were still available, although they had not been used for many years.

Having made up my mind that I wanted a place with bottom heat, principally to strike dahlia cuttings in February and to start some seed that should be sown early in the spring, I cast about for the material and was fortunate enough to find all of it on the premises.

One of the first things I discovered was some old boards an inch thick and one foot wide. I had plenty of 6-foot sash, but it would have required two of them to have covered a bed the size I wanted. I found an old skylight sash 5 ft. 1 in. x 4 ft. 5 in. that was just the thing; it had not been used for a long time, but was in good condition.

To give the sash on the completed hotbed-greenhouse the proper pitch, I decided to take one of the 12-inch boards, cut it the length of one of the sides, and then cut it diagonally in two pieces. This did not waste any of it, and gave both beveled or triangular pieces of like dimensions which, when in place, would give the right pitch to the sash. I cut three pieces one inch shorter than the length of the sash, and two pieces 4 ft. 2¾ in. Of the long pieces, one was for the front and two for the rear; the shorter pieces were for the sides, forming the lower or ground boards with the triangular pieces in place on top of them, as shown in the photograph. Pieces of 2 x 3 in. scantling, cut a foot long, were placed inside the frame at the front corners to give solidity. The sash was hinged at the back; two like pieces, two feet long, were nailed in the back corners, so as to hold it in place when it was raised.

Before the sash was glazed it was given a coat of paint. The sash was filled with glass, nine inches wide and of varying lengths. It was not allowed more than a quarter of an inch overlap, except the top lights, which ran over in some cases nearly three quarters of an inch. When all the glass was set, two more coats of paint were applied to the woodwork. As I did all the work myself and had material on hand that could be used, the total cost of making the hotbed was five cents, for the putty!

Two cartloads of manure were dumped near where I was going to install this small "propagating establishment." The manure was well forked over and piled up a foot longer each way than was

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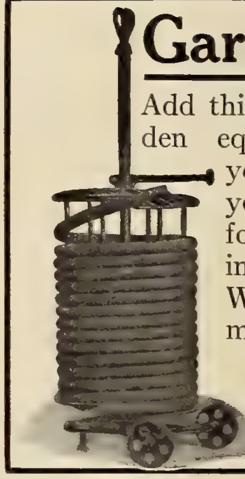

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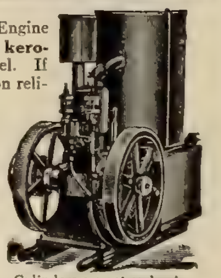

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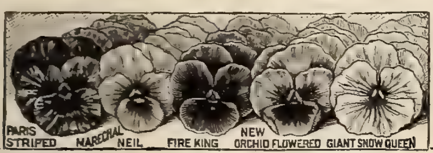

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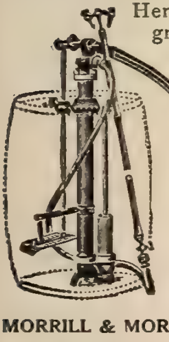
**FREE** PANSY BOOKLET HOW TO GROW BIG PANSIES

and the handsomest Seed and Plant Guide ever issued. Hundreds of illustrations, many in colors, true to nature. Mention this paper. Send today. Don't wait.

**GREAT NORTHERN SEED CO.**
**2317 Rose St. Rockford, Illinois**

## Bigger Fruit Profits



Here is a spray pump invented by fruit growers. It was our endeavor to secure the best spray pump to use on our 300 acre fruit farm that produced the

**ECLIPSE SPRAY PUMP**

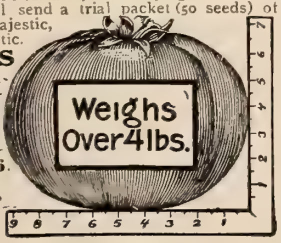
It overcomes every defect found in other makes—it has proved itself best in actual work. Put an Eclipse to work on your trees and earn bigger profits. Write for our fully illustrated catalogue. It tells why you should spray—and why you should do it with an Eclipse. It's free. Write to-day.

**MORRILL & MORLEY MFG. CO. Benton Harbor, Mich.**

## Grow These Wonderful Prize Tomatoes.

We have the largest varieties of tomatoes in the world. Specimens have been grown weighing over 4 lbs., and of superior quality and flavor. Can you do as well? It's certainly worth trying. Send 10c. stamps or silver, and we will send a trial packet (50 seeds) of each of these varieties, viz: Majestic, Red Majestic, Yellow Majestic.

**$75 IN PRIZES** are offered for the largest tomatoes grown this year. Full particulars with each package. Ask for our complete illustrated catalog of novelties and standard sorts vegetable, flower and farm seeds. **Dept 26.**



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**Des Moines Iowa.**

## Kate Douglas Wiggin and Nora Archibald Smith

Kate Douglas Wiggin

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### "Further Adventures of Nils"

"Miss Lagerlöf has made very beautiful and very vivid her Swedish wonderland, and the splendid wild creatures that fill it. The book is characterized by a fantastic air of mysticism and yet is, withal, so simple and so quaint that it casts an unusual spell over the reader. No happier gift for boy or girl can be found than this exquisite collection of tales."—*The Continent.*

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**By the Same Author**

"The Wonderful Adventures of Nils."

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Garden City **DOUBLEDAY, PAGE & COMPANY** New York

## Plant for Immediate Effect

*Not for Future Generations*

**Start with the largest stock** that can be secured! It takes **over twenty** years to grow such Trees and Shrubs as we offer.

**We do the long waiting**—thus enabling you to secure Trees and Shrubs that give an immediate effect. **Send for Spring price list.**

ANDORRA NURSERIES Box G CHESTNUT HILL, PHILADELPHIA, PA.
WM. WARNER HARPER, Proprietor

"Meynell, as he hesitatingly advanced, become the spectator of a scene not intended for his eyes."

And as she spoke a great shout which became a groan ran through the crowd. Men climbed up the railings at the side of the road that they might see better. Women stood on tiptoe.

As the procession neared them Mary saw a gray-haired woman throw up her arm, and heard her cry out in a voice harsh and hideous with excitement:

"Let 'im as murdered them pay for 't. What's t' good o' crowner's juries?—Let's settle it oursel's!"

"My dear fellow! No woman ought to marry under nineteen or twenty."

The Case of Richard Meynell

By

Mrs. Humphry Ward

¶ Publishers are accustomed to advertise at great length the opinions of the reviewers. This time we wish to reprint a letter from a reader. It is one of many, and represents the opinion stated repeatedly that **"The Case of Richard Meynell" by Mrs. Humphry Ward** is the best book she has ever written.

**Here is the letter:**

"'Richard Meynell' came very opportunely, in a time of depression and literary drought. I read it once, quickly and eagerly, for the story, you know. Now I am giving it a second, and more careful, perusal. It is a fine piece of work."

¶ Richard Meynell dares think and speak his real thoughts about this world and the next. If these things mean anything, the story of this man's struggle and love will have a real appeal for you.

¶ Critics and reviewers everywhere have declared it to be a product of Mrs. Ward's ripened art.

*Illustrated. Fixed price, $1.35 (postage 12c.)*

**Doubleday, Page & Company**
**Garden City** **New York**

SCARFF'S 1912 BARGAINS IN SMALL FRUIT PLANTS

*"At it 25 years."* Have grown from 1 acre to 1,100. We do not claim to know it all. We do know enough to start you right in fruit growing. Success depends upon good plants of the right variety. We grow the right kinds and make no extra charge for them. We strive for the best in everything. We actually paid

**$350 for 10 ears of SEED CORN**

We have issued and send free, to anyone interested in good Corn, a booklet telling how we planted the 10 prize ears of Corn, its yield, and other instructive facts. It is nicely illustrated from actual photographs.

**Send for Free Catalogue**

Every reader of this paper should have a copy. It is a concise business catalogue of **Plants, Fruit Trees, Ornamental Shrubs, Vines, Seed Corn, Oats, Potatoes, Alfalfa, Timothy, Clover, etc.** Planters should get our prices and terms.

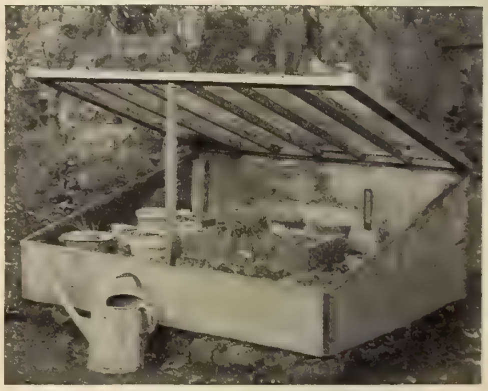
*We give our 1912 customers a start of the $350.00 Corn FREE*

**W. N. SCARFF** **NEW CARLISLE, OHIO.**

the frame. After the manure was well trodden down and left to lay and heat up well for a few days, the extemporized miniature greenhouse was set over the bed. Several inches of earth was thrown in and leveled off. I had bottom heat only as long as the manure kept up fermentation; after that, I went along with the overhead heat furnished by Old Sol.

I raised over five hundred dahlias from cuttings inserted in seed-pans filled with a mixture of sand and loam. I did not plant anything in the earth covering on the manure. The second year this soil grew a good crop of mushrooms of fine quality; I did not require a hotbed the second year of my operations. Besides the dahlias, I raised cannas, tomatoes, petunias, eggplants, etc., besides seedlings of berries grown for experimental purposes. The results of this little home-made contrivance were indeed gratifying.

California. W. A. PRYAL.



In this little hotbed over 500 dahlias were raised from cuttings, besides many other plants

FERTILIZERS

## Fertilizer for Cotton

THE old method of fertilizing for cotton was to apply 200 pounds of 2–2–8 mixture to the acre, regardless of the kind of soil, the season, or anything else. In later years, however, the cotton growers have found that it pays to give the question of fertilizer and the soil more attention. The soils of the northern and northwestern parts of Florida are very similar to that of Georgia, being underlaid with clay, and are termed good farming lands. These soils will require from 200 to 600 pounds of fertilizer to the acre. It is a good deal better to put on the maximum amount of fertilizer and get a bale of cotton to the acre than to put on 200 pounds and get a bale to every three acres.

In the southern part of Florida, where the soil is more sandy and porous, it will require a heavier application of fertilizer. There are some flat wood sections in the southern part of the state that are equal in productiveness to the land in the northern and northwestern part.

The standard cotton fertilizer is one analyzing 2 per cent. ammonia, 2 per cent. potash and 8 per cent. phosphoric acid. There is, however, a change being made, the ammonia being increased to 3 per cent., the potash to 4 per cent. and the phosphoric acid reduced to 6 per cent. This formula seems to give better results in both growth and lint than the old formula of 2–2–8.

Florida. E. O. P.

**A Spot of Bright Color in your FLOWER GARDEN**

You can add this finishing touch of beauty by planting a few Francis King Gladioli. This choice new variety is light scarlet, has large flowers and extra long spikes.

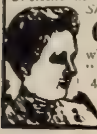
For only 50 cents, we will send you 20 bulbs of Francis King — postpaid — and one extra bulb of another choice named kind, our selection.

Our new catalog, out in February, offers a choice collection of flowers for the home garden. Sent free on application.

**Cushman Gladiolus Co.**
Desk 18, Sylvania, Ohio

**SEND ME TEN CENTS**

If you will send me the addresses of two of your flower loving friends, I will send you my bargain collection of *Spencer Sweet Peas, Giant Orchids* flowering type, *Nasturtiums*, dwarf chameleon mixed, *Royal Show Pansies, Asters*, finest mixed; also 30 seeds of the



**GIANT MARGUERITE CARNATION**

which **blooms in 4 months from sowing;** also **Free**, "Flower Culture" and my descriptive 1912 catalog containing 48 pages. Write **today**, enclosing 10 cents,

**MISS C. H. LIPPINCOTT**
*Pioneer Seedswoman*, Dept. 80, HUDSON, WISCONSIN
(1 hour's ride from Minneapolis)

**Pennsylvania School of Horticulture for Women**
**Ambler, Pennsylvania**

A school for theoretical and practical instruction in gardening and other branches of horticulture. Special attention given to the practical side of the work. **Spring term opens February 7, 1912.**

**Miss Jane B. Haines, President**

**LOOK OUT FOR SPARKS**

No more danger or damage from flying sparks. No more poorly fitted, flimsy fireplace screens. Send for free booklet "Sparks from the Fire-side." It tells about the best kind of a spark guard for your individual fireplace. Write to-day for free booklet and make your plans early.

**The Syracuse Wire Works**
107 University Avenue, - Syracuse, N. Y.

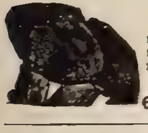
**Book on Grape Culture FREE**

Instructions for planting, cultivating and pruning; also descriptions of best varieties for vineyard or home garden. Profusely illustrated. Issued by the largest growers of grape vines and small fruits in the country. Millions of vines for sale.

**T. S. HUBBARD CO., Box 55, Fredonia, N. Y.**

**BIG MONEY IN MUSHROOMS**

**Profits Large and Quick**



Any one can make **$5 to $60 a week** growing mushrooms in spare time, in sheds, basements, etc. Big market and large profits. I have been in the business 14 years and will tell you how. Send for **FREE** book

JACKSON MUSHROOM FARM
6288 N. Western Ave. Chicago, Ill.

**GOOD SEEDS**

**BEST IN THE WORLD**

New Crop Grown at Farmer Prices. In addition a lot of extra FREE SEEDS thrown in with every order.

**BIG SEED BOOK FREE**

Our Grand Big Illustrated Catalog of all Farm and Garden Seeds is now ready and free to you. Write for it today. Send names and addresses of neighbors who buy seeds. Address

RATEKINS SEED HOUSE
SHENANDOAH, IOWA

**ATTRACTIVE SEED OFFER**

**FOR 50 CENTS**

we will send prepaid the following seeds which, if sold separately, at our retail prices of 10 cents a packet, would cost $1.90.

**One Packet each of the following Giant Orchid-flowering SWEET PEAS**

**New White Spencer.** Best White.
**Countess Spencer.** Pink.
**King Edward Spencer.** Brilliant Scarlet.
**Captain of the Blues Spencer.** Bright Blue.
**Aurora Spencer.** Best Striped.
**Primrose Spencer.** Pale Yellow.

**One Packet each of new Giant-flowering NASTURTIUMS**

**Dwarf Beauty.** Light Scarlet.
**Dwarf King Theodore.** Scarlet. Maroon; dark foliage.
**Dwarf Luteum.** Light Yellow.
**Tall Schulzi.** Scarlet.
**Tall Pearl.** Cream White.
**Tall King Theodore.** Scarlet Maroon; dark foliage.

**One Packet each of the following ASTERS**

**Violet King.** Beautiful Deep Violet.
**Early Snowdrift.** Earliest White.
**Improved Crego Pink.** Giant pure Shell Pink.
**Hohenzollern Rose.** Ostrich Plume Rose.
**Cardinal.** Beautiful Bedding Scarlet.
**Royal Purple.** A gem in Color and Size.

To induce you to take advantage of this very attractive seed offer without delay, we will include one packet of the New and very **Popular African Golden Orange Daisy**, a charming annual that is easily grown.

We are headquarters for the latest Novelties in seeds and everything in the line of Bulbs.

**Remember** that for only **50 Cents** we will send you all the seeds mentioned in this advertisement **value $1.90.**

All the above varieties are described in our 1912 catalogue; 120 pages, telling all about seeds, which is sent free.

*Stumpp & Walter Co*
**50 Barclay Street**
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**STUDY By Mail FARMING**

Why not learn the improved methods of intensive, scientific agriculture at home? You should learn all about our fine proposition. Faculty and Courses — **Truck, Small-Farm Course, General Farming, Poultry, Fruit, Stock, etc.** Write today which line of farming interests you and get particulars and

**VALUABLE BOOKLET FREE—"How to Make the Farm Pay More"**

More profit for the farmer. A safe way out for the city man, or woman. Students the world over. Easy terms

**American Farmers' School, 127 Laird Bldg., Minneapolis, Minn.**

Amateur, Fancier, Professional Breeder or General Farmer — the Book you need is

**"The Poultry Book"**

372 illustrations. One large handsome volume
*$5.50 postpaid*
DOUBLEDAY, PAGE & CO., GARDEN CITY, N. Y.

**How to Keep Bees**

By ANNA BOTSFORD COMSTOCK

***The Following Unsolicited Testimonial Has Just Been Received***

"WE are very glad to push the book as we consider it of unusual merit and will get out some circulars from this office ourselves."
*The A. I. Root Co., Bee-Keepers' Supplies*

*For Sale at all Book-stores. Net $1.00 (postage 10c.)*

**DOUBLEDAY, PAGE & CO.**
GARDEN CITY NEW YORK

HOW TO GROW AND MARKET FRUIT

**"How to Grow and Market Fruit"**

This new book covers the subject thoroughly and tells just what you need to do to have success in fruit growing. Valuable alike to beginners and orchardists of experience. Eminent horticulturists write us enthusiastically about this work. One hundred and fifty pages, ninety pictures showing *how*, strongly bound.

**Price 50 cents: rebated on first order for $5.00 or more.**

Prof. H. C. Irish, of the Missouri Botanical Gardens, St. Louis, Mo., writes: "I am in receipt of 'How to Grow and Market Fruit.' From a hasty glance through the work it appears to me to be a most practical publication and I shall make it a requirement for our garden pupils who are studying fruit culture to read it carefully."

**Evergreens, Hedges, Shade Trees, We Grow Them; Send for Catalog—**

In addition to our extensive fruit tree nurseries and big orchards we are heavy growers of many ornamentals. Our California Privet is the biggest and finest to be had anywhere. Our Evergreens and Shade Trees, too, have fine tops and magnificent root systems. We've got the soil, the climate and the "know how" for producing plants of unusual vigor. *Let us send you our catalog—Free to Home Owners Everywhere.*

**Come to Berlin**

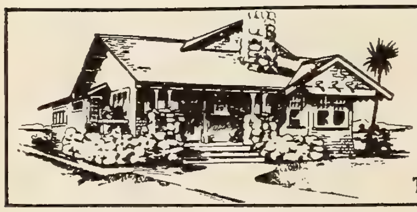
this spring, if you can, and let us show you how we do things. Select your trees while here, if you like, but you will be under no obligation to do so. We will pay your hotel bills while here.

We have several valuable farms for sale—choice "eastern shore" locations in Delaware and Maryland. Write for particulars to our real estate department if you think of moving soon.

**HARRISON'S NURSERIES, Main Ave., Berlin, Maryland**

**FACTS ABOUT APPLE GROWING**

The healthier the tree, the better the fruit. The longer trees are sprayed with "Scalecide," the more beautiful, healthful and fruitful they become. Mr. Geo. T. Powell, President of the Agricultural Experts Association, has used "Scalecide" exclusively for the past six years on his 160 acre orchard at Ghent, N. Y. He gets twice the price for his apples laid down at his Railroad Station that the growers do in Hood River. Mr. J. H. Barclay, of Cranbury, the acknowledged champion apple grower of New Jersey, has taken all the first prizes for the past four years at the New Jersey Horticultural Society meetings. He has used "Scalecide" exclusively for the past six years. Men who *KNOW* use "Scalecide." A postal request to Dept. "I" will bring you by return mail, free, our book "Modern Methods of Harvesting, Grading and Packing Apples," and new booklet, "SCALECIDE, the Tree-Saver." If your dealer cannot supply you with "SCALECIDE" we will deliver it to any R. R. Station in the United States east of the Mississippi and north of the Ohio Rivers on receipt of the price: 50-gal. bbls., $25.00; 30-gal. bbls., $16.00; 10-gal. cans, $6.75; 5-gal. cans, $3.75. Address, B. G. Pratt Co., 50 Church St., New York City.



**CALIFORNIA BUNGALOWS**

Third edition *California Bungalow Homes* now ready. $1.00 postpaid. 128 richly illustrated folio pages of beautiful Bungalows outside and in. Costs and details given. THE ACCEPTED AUTHORITY ON REAL BUNGALOWS.

***Smaller book MODEL BUNGALOW PLANS showing 38 ideal small homes 25 cents postpaid***

**THE BUNGALOWCRAFT CO., 404 Chamber of Commerce, Los Angeles, Cal.**

**CONSIDER NOW**

what it will cost and how much money you will save on your next season's fertilizer bill if you should buy your . . . . . .

**Nitrate of Soda**

**and other Farm Chemicals and mix them yourself**

Your own brand MIXED AT HOME will be better than any patent brand and is sure to have in it just what you want.

Book of formulas and full instructions for Home Mixing will be sent

**FREE OF COST**

If you will send your name and address on Post Card.

**DR. WILLIAM S. MYERS, Director of Chilean Propaganda**
**17 Madison Avenue, New York** ***NO BRANCH OFFICES***

## The Hardiness of Shrubs

A GENERAL definition of the word "hardiness" may be given which will apply to all sections of the country, but it will not apply to all shrubs, trees or plants. Hardiness is the ability of a plant or tree to withstand the soil and climatic conditions in which it may be placed, so that its vitality will not be lower than its natural or normal condition.

Not enough care is exercised in applying this word "hardy" to different trees and shrubs. People of the East and South are especially in error in recommending as hardy, various shrubs and plants which, when transferred to the North or some other locality, do not prove hardy at all.

Catalogues and magazines published in the East and South have recommended the ever-blooming hydrangea (*H. arborescens* var. *sterilis*), also called snowball hydrangea, as being perfectly hardy. This seemed like a very desirable shrub for the Northwest. We commenced to propagate it in the summer of 1907, but in the winter of 1908 all the plants practically froze back and we were obliged to discard it.

The Boston ivy, known as *Ampelopsis Veitchii*, is recommended as being perfectly hardy, but with us it frequently freezes back. There are many winters when the tips of *Berberis Thunbergii* freeze back.

The Amoor privet has been exploited and recommended as hardy wherever shrubs will grow, yet there are many places where it is not hardy. The pompom chrysanthemum is quoted by some nurseries as being perfectly hardy, yet the average winter in the Northwest will kill half the season's growth.

Shrubs or plants are not necessarily equally hardy in the same latitudes in the East and in the West or Northwest. Mountains, snow, ocean and lake temper the climate to a large degree. In Northeastern Canada, peaches are successfully grown; also many tender varieties of apples which it would be useless to attempt to grow in the same latitude as the Dakotas.

The question of tree hardiness is an important one to all growers in this section of the country. Some close observers have attempted to classify it as being associated with the thickness of the bark; others declare that it is not the thickness but the close grain and texture of the bark; others claim that hardiness belongs to those trees which drop their leaves early in the season, thus giving them time to mature; but I contend that these reasons are not definite or satisfactory: they are only straws and suggestions, and they may all be controverted.

The buckthorn holds its leaves until late in the fall, yet it is one of the hardiest shrubs we have. The lilac frequently drops its leaves early, but it is very hardy. The elm and ash, both hardy trees, drop theirs early.

The bark of some evergreens such as hemlock is very thick, yet they are not considered more hardy than the white spruce or Jack pine on which the bark is much thinner.

Should the attention be directed toward the breeding of hardiness into trees? I believe that hardiness may be bred into a tree as well as color and quality bred into fruit. To plant a tree without hardiness in the North Central States means a waste of time and money, and can only result in discouragement to the planter.

Minnesota. E. A. Smith.

[It is a fine point, open to debate, as to whether an abstract quality like hardiness can be bred into an individual or a species. That was the crystalization of the International Conference on Hardiness held in New York in 1906 and was never satisfactorily answered.— Ed.]

## More About the Xmas Rose

MANY people are interested in the Christmas rose (*Helleborus niger*), but it is so seldom to be had or seen that the general knowledge of it is quite small. While I have cultivated the Christmas rose quite a long time I do not even yet claim to know it well, though it is one of the most interesting plants in my garden. The plants came to me as a gift from a friend who kept a sort of old-fashioned garden and it would be hard to trace it beyond that garden. It is by no means the certain

# Plant About Your Home This Spring

Ugliness is a crime. Bald, unsightly places about a home are a disgrace. Trees and shrubs can be set out so they will give the surroundings an aspect of beauty and comfort — and add to the actual cash value of the property.

**Plant Trees and Shrubs That Will Give a Landscape Without Waiting**

Do not try to do the planting yourself unless you have the advice of experts. Do not use little, sickly trees or shrubs, and then sit down and wait a life time for them to grow. Have big, healthy trees and shrubs transplanted from where they have been prospering for years, so you will not have to wait for results.

**Get Our Book and Learn How To *SPEEDILY* Improve Your Grounds**

We make a specialty of Landscapes Without Waiting — have thousands of the choicest specimens that have already developed individualities. These can be transplanted successfully, and they will give you a landscape this summer. Write for booklet, "Landscapes Without Waiting" — free if you own a home with ground about it within 500 miles of Chicago — price 50 cents if you live further away.

**SWAIN NELSON & SONS COMPANY**
**Chicago 754 Marquette Building Illinois**

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½ Actual Size

## St. Regis Everbearing

**The Raspberry for the Million and the Millionaire. "There's Millions in it."**

You can now have wonderful raspberries from June to October by setting out the plants this spring.

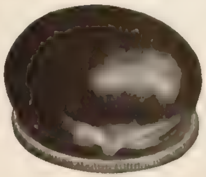
St. Regis produces continuously *from June to October*—heavy crops of large, luscious, sugary berries of bright crimson.

***Its summer and autumn crops do not consist of a few scattered berries, but good to heavy pickings all the time.*** One party who had a small patch, say half an acre, picked and shipped from it ***two or three pickings each week for four months*** and his profits were enormous.

Big profits growing St. Regis for market.

Grows successfully in any soil—endures without injury heat, drought and severest cold. ***Catalogue free.***

## Grow Chestnuts Like This For Profit



Covers a 50c. piece.

The trees are hardy, rapid symmetrical growth; luxuriant foliage; spreading boughs; clean trunk; stateliness.

These qualities combined and developed by science to a degree that closely borders perfection, in the new

## Sober Paragon
### Mammoth Sweet Chestnut

Crop, Fall of 1911, brought $48,000, orchard only ***9 years old.***

The only large ***sweet*** chestnut in the world.

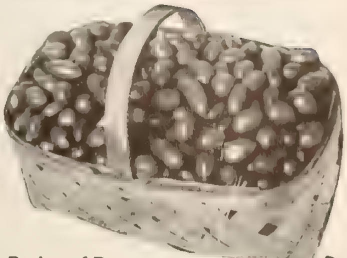
Bears the second year. The nuts average 1 to 2 inches in diameter.

United States Pomologist, G. B. Brackett, says "It is of large size, fine appearance and excellent flavor."

Testimony from growers, commission merchants, Forestry Experts, etc., given in our ***free booklet.***

SOBER PARAGON

We own exclusive control of the Sober Paragon. This copyrighted metal seal is attached to every genuine tree.



Basket of Pecans

## Hardy Acclimated Pecan Trees for Planting in Northern States

Here are ***Pecan Trees which will thrive in Northern States***—producing as prolifically and as profitably as any Southern Pecans.

Pecan Orchards pay far bigger profits per acre than wheat or corn.

A shade-tree of wondrous beauty, long the pride of the South, may now adorn any Northern landscape.

We control five varieties of hardy trees best suited for Northern planting. These have withstood temperature far below zero—never been known to "winter-kill." Successful in almost any soil. Begin bearing in 3 to 5 years.

***Catalogue free.***

**GLEN BROTHERS, Glenwood Nursery (Est'd 1866), 1902 Main St., Rochester, N. Y.**

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## A SAMPLE "LITTLE GIANT" OUTFIT

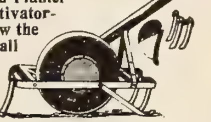
shown to your neighbors will mean many sales and every sale a friend for us because it saves time and labor and really makes gardening a pleasure as well as profitable for it enables you to do 4 times as much and so a sample outfit is **GIVEN FREE OF MONEY COST.** All we require is that you show the outfit to a dozen or more people—hand out 10 or 12 cards and sell 60 5c. papers of Kings "Royal Brand" Northern Grown vegetable seed. We make this liberal offer

**IN ORDER TO PROVE THE VALUE**

of the "Little Giant." It is the only combination tool that the Kitchen Gardener can afford. SEND NO MONEY. Just drop a card asking for list of seed to choose from and descriptive circular. We pay express in extra seed.

**KING SEED & IMPLEMENT CORP., Richmond, Va.**

**The Only Combination Seed Planter Cultivator-Plow the Small**



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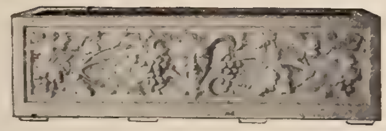

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**Sunburst.** A wonderful new yellow H. T. Ranks with American Beauty and the Killarneys in size and grandeur.

**Double White Killarney.** (Budlong strain). Double the petalage of the original white Killarney.

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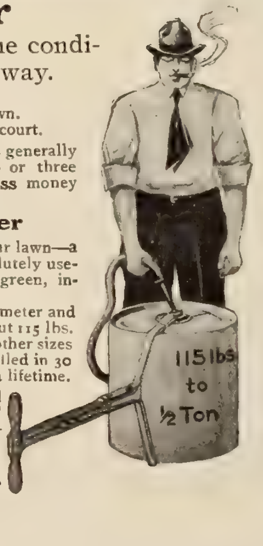

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A lawn roller whose weight can be adjusted to the conditions of your lawn, garden, tennis court or driveway.

All in one {
A **light** Machine for the soft, wet spring lawn.
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Why buy one of the old style iron or cement fixed weight rollers that is generally too heavy or too light to do your lawn the most good, paying for two or three hundred pounds of useless metal — and freight on it as well — when **less** money will buy the **better**, most **efficient**.

**"Anyweight" Water Ballast Lawn Roller**

Remember that a difference of 50 pounds may mean success or ruin to your lawn—a half ton machine will spoil it in early spring, while a 200 lb. roller is absolutely useless later in the season. If you desire a fine, soft, springy turf of deep green, instead of a coarse, dead looking patch of grass, use an "Anyweight."

The "Anyweight" Water Ballast Roller is built in 3 sizes, all of 24 inch diameter and of 24, 27 and 32 inch widths. The machine shown here (our smallest) weighs but 115 lbs. empty, 470 lbs. when completely filled with water, and 737 lbs. with sand. The other sizes weigh 124 and 132 lbs. empty and from that "anyweight" up to half a ton. Filled in 30 seconds—emptied in a jiffy. Fully protected by our patents. Run easy—last a lifetime.

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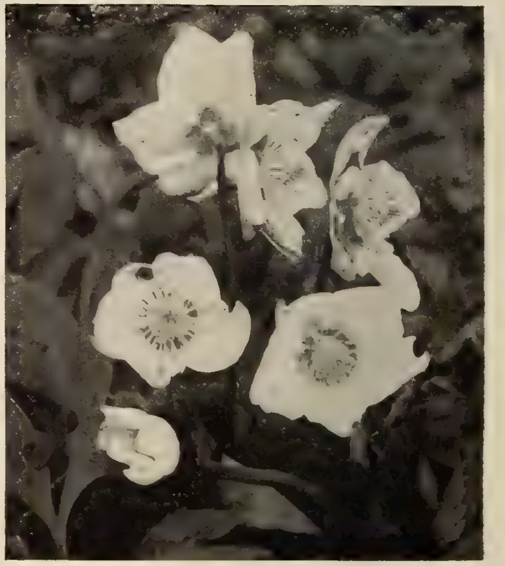
WILDER-STRONG IMPLEMENT CO. Box 6, Monroe, Mich.

bloomer that it is sometimes said to be, though I am sure it would do much better if I knew how to manage it.

My plants stand at the foot of an old oak tree in the back garden, not a very good place, but the tree is practically dead and does not injure the plants more than merely to shade them. Two years ago the plants bloomed at their best, the pure white petals, appearing much like overgrown mandrake flowers, making a great show. The next fall, though, the weather seemed not to be favorable, for while the plants had grown well through the summer most of the buds blasted.



The Christmas rose. which commences to bloom when other plants are asleep for the winter

Last fall the flower stems came up fairly well and produced a dozen fine flowers. The flower stems seemed to enjoy the worst fall weather when it was not too cold and grew the fastest just after a cold rain, but it is a mistake to suppose that they are to any degree frost proof.

The plant is stemless, but evergreen, the old leaves disappearing in the spring when the new ones come on, much as in case of the hepatica. The scapes are from one to three flowered. The photograph was taken on the 10th of November, before severe freezing weather had come on, but on the night of the 13th a cold wave arrived, the temperature going down to 18 degrees. While this did not kill the flowers it took all the white out of the petals, as I have observed that it did in former seasons, leaving them a greenish yellow, in which condition they remain till they disappear in the spring with the old leaves.

If the flowers do not open before heavy freezing, they will not open at all. One season I enclosed a bunch in a box with a glass top, but it did not save the late buds. If I had a coldframe sash with double glass, or with single glass, banking the plants with leaves, perhaps covering them in entirely on very cold nights, I think I could save them well into winter. It is a great sight when they begin to open in November, when all other plants are leafless and dormant.

New York. JOHN W. CHAMBERLIN.

## Solid-color Irises

NO GARDEN matter is more neglected by growers, advertisers and catalogue-writers than solid-color German irises. The two-color varieties are beautiful sometimes, curious always; but for outdoor charm, the self-colored sorts are ten times as valuable. The German iris comes in a week of few other flowers, a time of great scarcity; no other plant makes any spread of color in the garden; and yet how many people will buy five new sorts of iris for every five new sorts of tulips in a season? Either is a sure investment; the iris is green ten months of the year, but the tulip is a solid color, and the buyer can foresee it with a sort of knowledge. "I don't like irises; they

## Prize Winning ASTERS

"I took first prize on your Asters," or "Your Asters were the finest I ever saw,"—so say scores of my patrons. I want you and your friends to try them. **Send a dime** and addresses of two flower growers, and I will send you:

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2. Coupon **good for ten cents** on any seed order.
3. My leaflet. **"How to grow Best Asters."**
4. My new **Illustrated Flower List,** with dainty, handpainted cover design (over 600 kinds—seeds, plants and bulbs).

**You will be surprised** to see at what a small cost you can have a beautiful flower garden. Write today for my List anyway—it is free—and **plan your garden early.**

**MISS EMMA V. WHITE, Seedswoman, 15th year**
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All sizes 2 inches to 15 inches. Write for prices at your station.

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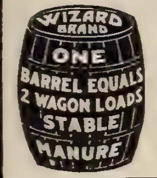

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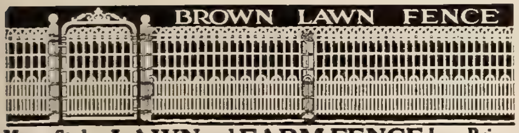

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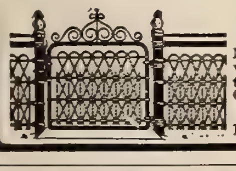

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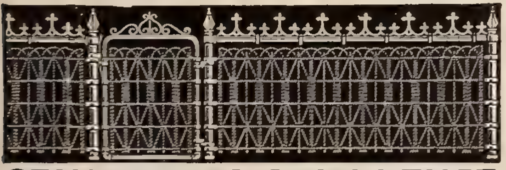

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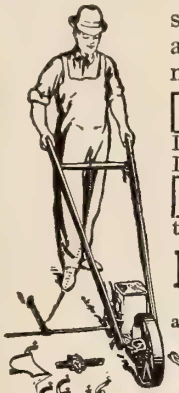

stands everywhere for the latest-improved, most useful and economical farm and garden tools. Products of 35 years' experience by a practical farmer and manufacturer who has made a science of tool building. 55 tools; guaranteed.

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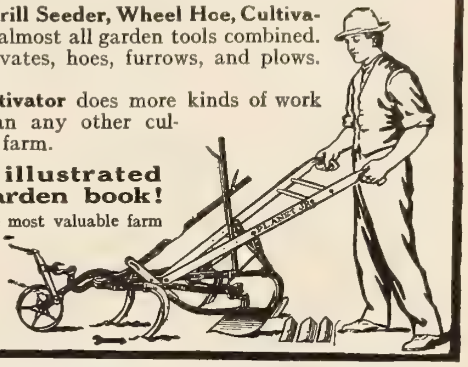

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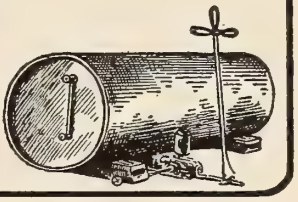
We install five distinct types of Water Works Equipment for the Rural Home—for hand or any class of power. Therefore, you secure the benefit of our vast experience over other concerns having but one type of System to offer,

If you are interested write for our Water Works Book "XB" which shows the different types and how they can be installed.



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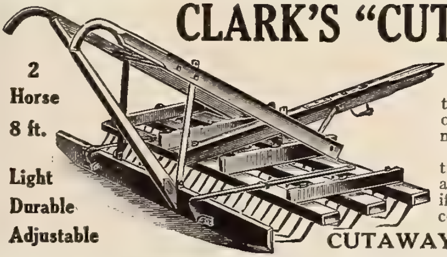

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**CUTAWAY HARROW CO. 902 Main St., Higganum, Conn.**

## 88th Annual Catalogue. High Grade Seeds

¶ If you are not a regular recipient of this catalogue, the list is still open and we shall take pleasure in mailing you a copy. We suggest that you make use of it in summing up wants for the coming Spring planting. Here we call attention to three of our specialties for the new year.

**Cauliflower** — Rickards Brothers' Ball of Snow, the earliest in cultivation, producing the finest snow-white heads, per package 50 cents.

**Lettuce** — Rickards Brothers' New Head, a grand variety for the outdoors or forcing, producing fine, large, solid heads, per package 10 cents.

**Tomato** — Rickards Brothers' Extra Early, a fine, large, smooth, solid, bright-red variety of excellent quality, per package 10 cents. *Send for catalogue.*

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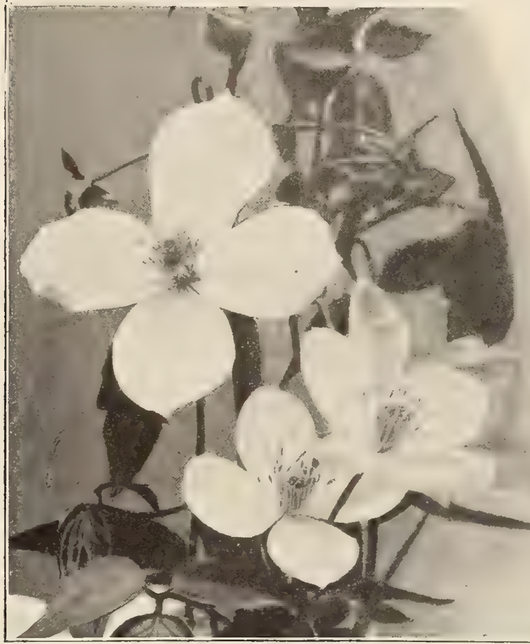

**CLEMATIS MONTANA,** rubens. *See illustration.* New pink, summer-blooming climber. Plants from 3½ in. pots, each 75 cents; doz. $8.00. Plants from 2½ in. pots, each 50 cents; doz. $5.00.

**AMPELOPSIS THOMSONII.** Beautiful tri-color Woodbine, changing in the autumn to rich red. Plants from 3½ in. pots, each 75 cents; doz. $8.00. Plants from 2½ in. pots each 50 cents; doz. $5.00.

**LILIUM MYRIOPHYLLUM.** Blooms in July; flowers white suffused with pink, canary-yellow throat. Delightfully fragrant. Bulbs each $1.50; doz. $15.00.

**LILIUM SARGENTIAE.** Blooms in August. Enormous flowers, white shaded purple, fragrant. Bulbs each $1.50; doz. $15.00.

Do not fail to procure our Spring Catalogue which contains many new plants offered for the first time.

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**You Can Pick Out**
**the houses that have been stained with**
**Cabot's Creosote Stains**

The colors are so soft and rich and durable that all other exterior stains look cheap and tawdry in comparison. They go farther, last longer, preserve the wood better, and are infinitely more artistic. The genuine creosote wood preserving stains. Every gallon guaranteed. Don't use stains that smell of kerosene, benzine, or other worthless and inflammable cheapeners.

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FROZEN DOG RANCH-HOUSE
Foot of Seven Devils Range, between Freezout and Squaw Butte, on the Payette River
*Stained with Cabot's Stains*
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**California's Trees Famous the World Over**

You will never forget the distinctive "character" of California's trees and shrubs, once you have seen them—Maples, Oaks, Elms and other deciduous trees; Hydrangeas, Spireas, and other shrubs, and, grandest of all, the Roses. You realized that they were *different, better,* than those you had at home—you wished you could grow others like them. And you *can* enjoy "California's Best" at home—wherever home is.

We grow the above, and many rare evergreens, etc., so well that they will transplant successfully to *your* grounds, and continue their magnificent growth.

**We Handle Luther Burbank's Newest Fruits Exclusively**

—Prunes, Plums, Peaches and Cherries. Don't miss this opportunity to plant some of these rare, delicious fruits in your home grounds. Our free illustrated Price Catalogue describes them. "California Horticulture," the fruit-grower's guide, and "New Products of the Trees," 25 cents each, postpaid.

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**THE STANDARD SPRAY PUMP**
**HIGH POWER—LOW COST $4.00**

***Used with bucket, knapsack or barrel***

Here is a pump that will spray your tallest fruit trees from the ground in half the time required by any other. Will whitewash your chicken coop, spray cattle "dip" and, with knapsack attachment, spray a field of potatoes as fast as a man can walk.

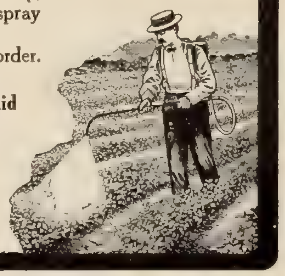
Simple, easy working. Nothing to get out of order. Made of brass throughout.

**Warranted 5 years. Price $4. Expressage prepaid**

The only practical low priced sprayer for orchard, garden, field or vineyard.

***Send no money now but write today for Special Offer and Catalog.***

**The Standard Stamping Co.**
273 Main St. Marysville, O.



look *so monkey!*" one amateur gardener exclaimed in my hearing.

As a matter of fact, there are beautiful varieties in self-tones. Florentina, and the old black-purple which flowers a day earlier than the orris; a pale skyblue slightly touched gray, also early; May Queen, pink; Astrate or Garibaldi, both lilac-pinks; the old tall straw color, scentless, which is sold as Canary Bird or flavescens and probably is neither; Celeste, skyblue; a rare tall Yale blue with orange beard, for which I know no name; and the tall blue or white forms of Orientalis, tall and later than the Germanicas proper. Of Yellows, Californica, Aurea of the Germanica section, Mrs. Neubronner, and San Souci, give practically solid colors although darker veinings on yellow seem to be the rule with these plants. (There is an Aurea of English catalogues five feet tall and flowering in late June or July which should not be confused with the German flag.)

The iris is by nature a meadow plant; and it is prettiest to look at from a slight elevation, two feet or so above the level of the beds for a path, or three and a half feet for a garden bench. The "falls" of many sorts do not droop until late evening or not even then; and the charming ranks of bloom, seen from above, assume a quaint regularity of arrangement, like roof-tiles of old Nuremburg gables viewed from an attic window. If the iris can be grown in a sort of regulated confusion in a tiny meadow of their own, ten to twenty sorts in great splashes of color each, running into each other without noticeable paths and demarcations, they make the prettiest kind of a sunken garden to view from a porch or summer house. But for such use varieties that "look monkey" are very wrong; only solid tints are to be trusted in this sort of ground-painting.

Pennsylvania. E. S. J.

## Three Late Faithfuls

I TOOK a turn through my garden on the 11th of last November to see what there might be left. Somehow one flower at that time of year, like the one sheep which was more prized than the ninety and nine, gives more satisfaction than many of the wholesale displays of midsummer. It is nothing to have roses in June; but it gives one a glow of gratitude, when autumn has struck nearly everything down, to see one or two faithfuls still displaying their brave bits of color.

And by the law of the survival of the fittest, what I saw seemed to me to be a lesson in what ought to be planted. And the three things I saw were things which for some reason are almost never seen in the average suburban garden.

One was a stalk of larkspur — an exquisite dash of blue in the brown of the withered border. The second was a California poppy — bright yellow against its foliage of silver gray. The third was a clump of Gruss an Teplitz rose-bushes, still laden with abundant blossoms — a brilliant red.

Larkspur in my garden sows itself and demands little coddling. Under the eaves of the house there is some that grows six feet high. The sky-blue kind is a poem. Everybody likes larkspur, and the wonder is that more people don't plant it. The cannas and the salvias, which are seen in nearly every yard — but not in mine; a narrow prejudice, no doubt, but one I cannot get over — had long ago surrendered their flaming tints and laid down their leaves in ashen, frost-bitten death.

California poppy is another flower that sows itself. The one that bloomed in my garden last November was part of next spring's crop. I have a patch of it in the yellow end of the garden, and I grow light blue things behind it.

People are learning about the Gruss an Teplitz rose little by little. It is unquestionably a wonderful rose. We brought bowlfuls of the buds into the house all through the fall. Kaiserin Augusta Victoria, Mme. Caroline Testout, and several of the other modern beauties kept along until the last of October. Teplitz seems to have no feelings; and the cold-grown blossoms were much fuller and more exquisite, even if somewhat smaller. Bring a dozen of them in and arrange them loosely in a fish-bowl. Have them on the Thanksgiving table and see your company's eyes stick out at the idea of roses from outdoors on such a day!

New Jersey. J. D. Whitney.

"LION BRAND" TRADE MARK SPRAYING MATERIALS

**Millions of Dollars Are Lost Annually by Fruit-Growers, Because They Do Not Spray Persistently With Properly Made Sprays**

BLANCHARD'S

## LION BRAND INSECTICIDES & FUNGICIDES

ARE THE STANDARD OF THE WORLD

**Strongest — Purest — Most Effective — Safest to Use**

**Destroy every Known Insect Pest and Fungos Disease of Fruit Trees; Save the Trees and Insure Larger Crops of First Quality Fruit**

**"LION BRAND" LIME-SULPHUR SOLUTION**

For San Jose Scale particularly, and the only Spray that destroys Scale and does not injure Trees. Ready for use, and more economical than home-made

**"LION BRAND" BORDEAUX MIXTURE**

Prevents Blight, Mildew, Rot, etc., from destroying Potatoes, Beans, Peas and Melons; keeps spots and specks off Apples, Peaches and other fruit, and makes crops surer and far larger. One gallon to 49 of water.

**"LION BRAND" PURE PARIS GREEN**

contains absolutely not a particle of filler or adulterant of any sort.

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The stickiest arsenate made. Preferable for Codling Moth, Curculio, Elm Leaf Beetle and Chewing insects of all sorts, on trees, shrubs, vines, bushes and vegetables, where it is desirable that the poison remain longer on the foliage than is possible with other insecticides. Does not burn the most delicate foliage.

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**FREE SPRAYING BOOKLET**

a copy of which we shall be glad to send you. *Write for it to nearest office*

Blanchard's Products are sold by dealers and agents everywhere, or direct if your dealer cannot supply you.

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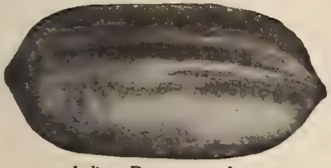
**Valuable as Fruit Trees, Beautiful as Shade Trees**



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Hardy types suitable for Northern Planting are propagated in our nurseries under northern climatic conditions. Varieties introduced by us won all the premiums offered on Northern Pecans in the Morris Competition at Ithaca, N. Y., in December. Write for a copy of our booklet, "Nut Trees". Free upon request.

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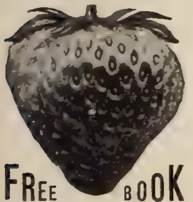

Is a complete treatise on strawberry culture written by America's greatest strawberry expert. Indorsed by agricultural colleges and strawberry growers of highest authority. Government reports show that strawberries yield more dollars per acre and give quicker returns than any other crop. Get our book and learn how. IT'S FREE!

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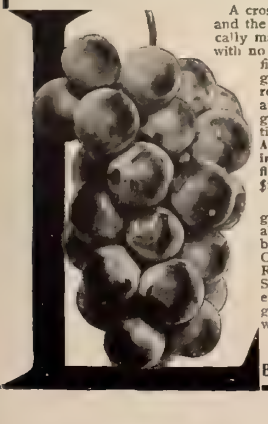
*The Grape for Everybody Everywhere*



A cross between the grand old Catawba and the ever popular Concord—so scientifically made that it unites all their merits with no defects. Equal in quality to the finest hot-house grapes — as easily grown as the Concord. Bright wine red in color, unexcelled as a keeper and shipper, as prolific as any grape grown. A ten years' test without petting has proved its superiority. **Awarded first prize wherever shown, including American Institute's Certificate of Merit.** Strong vines, each, $1.00; dozen, $12.00.

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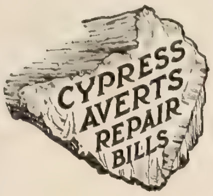
*"THE BUNGALOW BUG STILL BUSY"* and *"NOTHING TO IT BUT CYPRESS"*



for people who want to vaccinate their building investment against the Repair Bill Bugaboo.

Thousands have been writing us for plans for a $5,000 CYPRESS BUNGALOW — so here it is:

CYPRESS DEFIES DECAY

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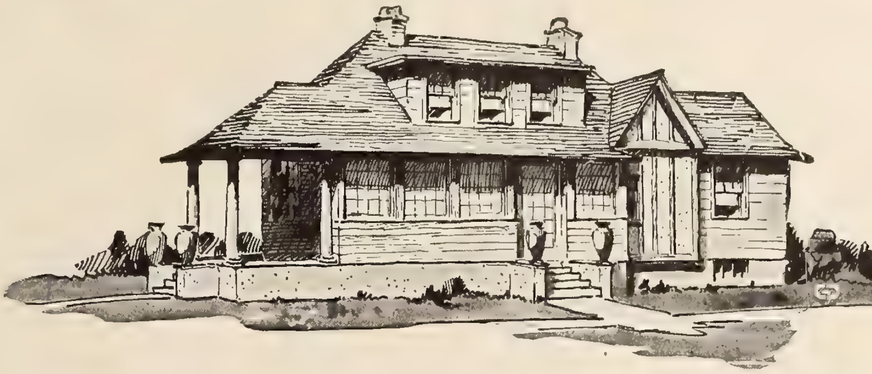

THIS IS AN EXCEPTIONALLY INTERESTING and ARTISTIC **CYPRESS BUNGALOW** SPECIALLY DESIGNED FOR US BY ONE OF NEW YORK'S ABLEST and BEST KNOWN ARCHITECTS

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The less you are able to spend in building, the more important it is that you secure the longest possible life for your investment. The *more* you spend, the more important it is that your money represent a *permanent* investment, and not have to be spent over again in exasperating repairs. CYPRESS is "the one best buy" in the entire wood market for those who care what they get for their lumber money. "CYPRESS lasts practically forever." CYPRESS RESISTS THE ROT-INFLUENCES which so soon destroy other woods. CYPRESS does not warp or shrink or swell like most woods—and takes paint or stain perfectly. Whether for MANSION, PASTURE-FENCE OR "LITTLE JOB OF BACK-STEPS"—remember—"IF YOU BUILD with CYPRESS YOU BUILD but ONCE."

*Ask our* "ALL-ROUND HELPS DEPT." *any* question about Wood. Our reply will be frank. We recommend CYPRESS *only* where CYPRESS can *prove* itself "the one best wood" for *your* use.

**SOUTHERN CYPRESS MANUFACTURERS' ASSOCIATION**
**1209 HIBERNIA BANK BUILDING, NEW ORLEANS, LA.**

We *produce* CYPRESS *but do not retail it.* INSIST ON IT NEAR HOME. *Wide awake Local Dealers sell CYPRESS; if yours does not, WRITE US, and we will tell you where you CAN get it.*

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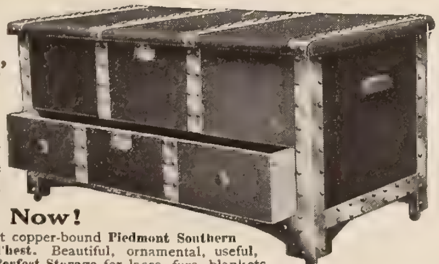
15 Days' Free Trial



**44 in. long**
**20 in. wide**
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**Order Now!**

This elegant copper-bound **Piedmont Southern Red Cedar Chest.** Beautiful, ornamental, useful, valuable. **Perfect Storage** for laces, furs, blankets, woolens, etc. Moth, Mouse, Dust and Damp Proof. A delightful wedding or birthday gift which combines **beauty and real utility.** Send for illustrated catalog showing all styles Chests, Chifforobes, Wardrobe Couches, and interesting booklet, "The Story of Red Cedar." All goods sold direct from factory AT FACTORY PRICES. FREIGHT PREPAID. 15 DAYS' FREE TRIAL.

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VELVETLAWN

PUTS the seed in the ground—not on top. None blown away or eaten by birds. Makes a beautiful, uniform lawn certain in the shortest time. Saves enough seed to pay for itself. Run easily by one person. No matter how small your lawn you can afford to have this seeder.

**Let us send you letters from users, prices, illustrations, etc. We analyze soil and advise our customers free as to the best seed and fertilizer. Write today.**

**VELVETLAWN SEEDER CO.**
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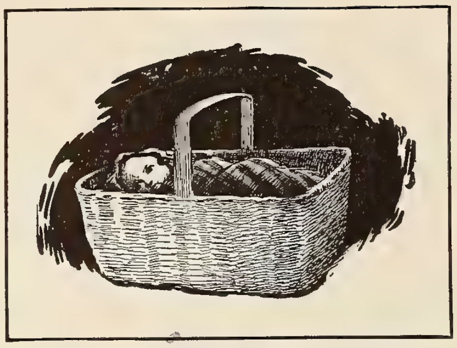


*"If Huck Finn ever had a brother, this is he"*

DANNY'S OWN STORY

By Don Marquis

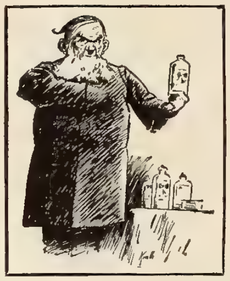
*"I been around the country a good 'eal, too, and seen and hearn of some awful remarkable things, and I never seen no one that was n't more or less looney when the search us the femm comes into the case. Which is a dago word I got out'n a newspaper and it means: 'Who was the dead gent's lady friend?'"*

¶ Danny enters upon the scene nameless, a baby in a basket, abandoned before the door of Hank Walters, the blacksmith. From that very minute, the fun begins—such real, delicious, irresistible fun as only Mark Twain and O. Henry have hitherto furnished the world.

¶ Autobiographically, Danny says: "There was n't nothin' perdicted of me, and I done like it was perdicted. If they was devilment anywhere about that town they all says: 'Danny he done it.' And like as not I has. So I gets to be what you might call an outcast."

¶ The boy runs away presently with a peripatetic "Doctor" whose mission is to make known the wonderful powers of "Siwash Indian Sagraw;" and he plunges into the kaleidoscopic life of the patent-medicine fakir, small circus shows and so on, with a zest in life and a human philosophy in his side-splitting humor that are quite amazing.

*Illustrated irresistibly by E. W. Kemble. Fixed price, $1.20 (postage 12c.)*



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SUCCESSFUL SPRAYING

With a Horse Power SPRAMOTOR you can spray to some purpose. High pressure ensures best results. Over 500 in use. For 1 or 2 horses. Regulation is automatic—no safety valve. Can be hand-operated. Nozzle protector, 12 gal. air tank. Nozzle control perfect for height, width and direction. Equally efficient in field, vineyard and orchard. Guaranteed against defects for a year. Write for free treatise on crop diseases.

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# PRACTICAL HINTS for Beginners

## How To Make Dahlia Cuttings

TO OBTAIN the largest number and the strongest plants from an individual clump of dahlias, it is essential that the clumps intended for propagation should be carefully selected at the time of lifting the roots and should be treated separately from the rest of them.

The eyes of a dahlia root are located on the joint of the individual tuber to the main stem which is termed the crown. Now and then eyes are found also on the stem two to three inches above the crown. The clump or root should be kept in storage in a place where the temperature is about 45 degrees and should be carefully watched so that it does not dry out. It should at all times be kept in a healthy and plump condition.

About February first plant the clumps in a greenhouse bench where the temperature is about 60 degrees during the day and 50 degrees during the night. Bury the clumps in the soil so that the entire crown is above the surface; in order to accomplish this, even one inch or so of the tubers is often above the soil.

After they are planted take care not to over-moisten the soil as the tubers are liable to rot before they start to grow. The bulbs will slowly swell and the first growth will make its appearance, though sometimes not for three or four weeks after planting. Then increase the temperature during the day and give more water. Do not make any cuttings until three sets of leaves are fully formed.

The cutting is taken usually in the second joint and care should be taken that the cut is made directly diagonally across the joint; if cuttings are made below or above, no tubers will form from the plant during that season. Place the cuttings in clear sand in a propogating bench which has ample heat underneath it.

It usually takes from ten to twelve days to root a cutting. From the bench they are potted into 2½-inch pots, filled with ordinary soil, and placed in a greenhouse of a temperature where carnations are grown.

Between April 15th and May 1st, remove the plants to a coldframe where they can be carefully hardened up. Do not set plants in the open until every possible danger from frost is passed.

If you are growing any of the plants for exhibition purposes, one can easily figure about ninety days from the time the roots are planted in the open until the flowers are produced.

By taking the cutting from the second joint and leaving the clump in the earth, new growth appears as branches from the first joint. These again can be used for cuttings. On an average a strong clump of dahlias should produce from five to ten strong, original eyes and, propagating again from the branches of the first joint, the quantity of young plants obtainable from a strong clump of roots should be in the neighborhood of twenty.

It has been my experience that the first cutting produces the best result and these should be kept separately, for the roots are stronger and the flowers better. The clumps from which they have been propagated can also be used again by careful dividing, and being hardened and cured before they are planted outdoors.

By "hardening," we mean they should be placed in a coldframe, fresh air being gradually admitted; and by "curing," that the bulb should rest three weeks before it is planted again in the open ground to start new growth.

Pennsylvania. M. Fuld.

## The perfect lawn requires the right grass seed

The right grass seed for each purpose is clearly indicated and fully described in our 1912 catalog.

For average lawns — for shady spots — for golf courses — for pastures — for parks — for each purpose there is one best mixture of grass seeds. If you follow the Michell catalog you can make no mistake.

In all parts of the United States, Michell's Grass Seeds have proved their advantages in quickly producing a permanently beautiful lawn.

**MICHELL'S GRASS SEEDS**
**READY FOR MOWING 4 TO 5 WEEKS FROM SOWING**

On the White House Grounds at Washington, at all recent National and International Expositions, (Philadelphia, Buffalo, Jamestown and Portland, Oregon,) in the best known public parks, and finest estates —

**Michell Grass Seeds are extensively sown because of their superiority**

**$1** brings to your door, prepaid, our Introductory Package of Michell's Evergreen Lawn Seed — the ideal mixture for general purposes — and our Special Bulletin, "How to Make a Lawn." Package contains one-fifth of a bushel — enough for the average lawn.

### *Our 1912 Catalog*

Chock full of facts on the distinctive grass, flower and vegetable seeds that will best repay your planting effort, sent *free* on request.

**HENRY F. MICHELL CO.**
**520 Market Street Philadelphia, Pa.**

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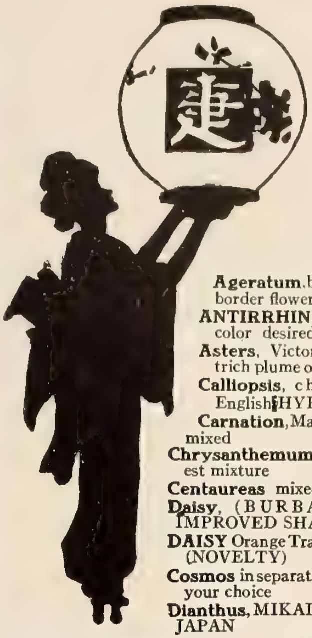

WOULD you like your garden to blossom forth in brightest flowers as soon as the late spring bulbs begin to fade? You can have it so, by starting EARLY and sowing the seeds in the house during FEBRUARY. The YOUNG PLANTS will be ready to set out as soon as the weather is settled, when others just begin to sow their seeds in open grounds. CONSIDER the START you gain over them and TRY it. Here is list of flowers which will bloom from June to LATE frosts.

**Ageratum**, beautiful border flower, mauve
**ANTIRRHINUM**, any color desired
**Asters**, Victoria, Ostrich plume or Comet
**Calliopsis**, choicest English HYBRIDS
**Carnation**, Marguerite mixed
**Chrysanthemum**, grandest mixture
**Centaureas** mixed
**Daisy**, (BURBANK'S IMPROVED SHASTA)
**DAISY** Orange Traansvaal (NOVELTY)
**Cosmos** in separate colors, your choice
**Dianthus**, MIKADO from JAPAN
**Eschscholtzia**, Rose Queen or Fireflame
**Gaillardias**, English Hybrids
**Heliotrope**, all shades mixed
**Gergera Jamesoni**, (Novelty)
**Kochia Trycophylla.** (Summer Cypress)
**Larkspur**, Emperor
**Lobelia**, many colors mixed
**Lupinus**, Polyphyllus Roseus (Novelty)
**Lychnis**, Haageana
**Mignonette**, mixed
**Forget-Me-Not**, Giant Alpestris
**Pansies**, Giant flowers any color
**Petunia**, fringed Giant single
**Salvia**, Fire King
**Scabiosas**, in mixture
**Stocks**, or Gilliflower brightest shades mixed
**SWEET PEAS** in pure white
" blush and rose
" Clear lavender
" Scarlet and carmine
" Blue to purple
" Bronze to maroon
" Orange and rose
" YELLOW and primrose
" America, striped
**Verbenas**, any color
**Viola cornuta**, (Tufted Pansies)
**Wallflower**, single or double
**Zinnias**, single or double

**Any single packet on this list, 10 cts.**
**6 packets, your choice, 50 cts.**
**20 packets, your choice, $1.50**
**The 40 packets, as per list, $2.50 POSTPAID**

*NOTE: The Sweet Peas listed under color contain in every packet a percentage of the WAVED SPENCER TYPES of that color. With every order sent out we mail "FULL DIRECTIONS" HOW to succeed with FLOWER SEEDS sown for EARLY flowering in the house. Send for our IDEAL GARDEN BOOK for 1912. SEND TODAY. It is sure to interest you. A postal brings it.*

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# ALFALFA

## THE FARMER'S NITROGEN FACTORY

From Bulletin of New Jersey Experiment Stations, Rutgers College:

### YIELD

The yield on established fields of Alfalfa will vary according to the character of the soil, thickness of stand and method of treatment, and will range from ten to twenty tons or more of green forage or two and a half to five tons dry hay per acre. The larger yield is readily obtained on good land.

Alfalfa is a heavy feeder and a large producer, and sometimes considered as an exhaustive crop. This is a mistaken idea. It should be rather looked upon as a crop fulfilling the aim of rational agriculture, which is to transform into produce the raw materials at our disposal in the atmosphere and soil. An acre of alfalfa will gather from 125 to 250 pounds of nitrogen from the air, which will contribute to the building up of the soil in this element, which is necessary for such crops as wheat, oats, corn and grass, that rely entirely upon soil sources for this constituent. Alfalfa is a soil builder.

TO RAISE ALFALFA SUCCESSFULLY, IT IS NECESSARY TO USE PLENTY OF LIME! WE SELL LIME, AND GROUND LIMESTONE, FOR AGRICULTURAL PURPOSES. SEND FOR BOOKLET, "MORSE GROUND LIME FOR THE LAND."

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**17 State Street New York**

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WILLIAM SHEAN
What a Galaxy of Fragrant Charmers!
From "The Best Roses for America"
Conard & Jones Roses
Guaranteed to Bloom
Infinite variety
On their own roots
WHITE KILLARNEY
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**Conard & Jones Roses** — what glorious color and form and witchery of perfume that name assures! What myriads of magnificent blossoms it makes possible for all lovers of the Queen of Flowers! Such endless varieties for every use! And such riots of color!

Surely you need our large, beautiful new Rose Book! Many leading roses are shown in natural colors. It contains most valuable data on planting, fertilizing, cultivating, etc., formerly issued in our "How to Grow Roses." And included is a complete Rose Lover's Calendar and our new Free Delivery offer.

**4 above Roses**

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| 1-year size, | 75c |
| 2-year size, | 2.00 |
| Star size, | 3.25 |

Prepaid

Fifty years of priceless experience and expert propagation are behind this book. The above photograph is reproduced in natural colors in our Rose Book.

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THE CONARD & JONES CO., Box 24, West Grove, Pa.
*Rose Specialists — 50 years' experience.*

THE BEST ROSES FOR AMERICA

*From a Photograph Showing the Last Step in Locating the Exact Center of Population of the United States.*

"The Center of Population"

*A Title that Fits Every Bell Telephone*

From the census of 1910 it is found that the center of population is in Bloomington, Indiana, latitude 39 degrees 10 minutes 12 seconds north, and longitude 86 degrees 32 minutes 20 seconds west.

"If all the people in the United States were to be assembled in one place, the center of population would be the point which they could reach with the minimum aggregate travel, assuming that they all traveled in direct lines from their residence to the meeting place."

—*U. S. Census Bulletin.*

This description gives a word picture of every telephone in the Bell system.

Every Bell telephone is the center of the system.

It is the point which can be reached with "the minimum aggregate travel," by all the people living within the range of telephone transmission and having access to Bell telephones.

Wherever it may be on the map, each Bell telephone is a center for purposes of intercommunication.

To make each telephone the center of communication for the largest number of people, there must be One System, One Policy and Universal Service for a country of more than ninety million.

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For over half a century "Reeco" Rider and "Reeco" Ericsson Pumping Engines (operated by hot air) have been considered the most efficient, economical and dependable equipment made for domestic water supply.

Water service that is abundant for all needs, that is constant in all seasons and all weather conditions, is assured by "Reeco" equipment—in connection with pressure or elevated tanks.

No other pumps are so simple to operate, so safe and reliable, so free from breakdowns, as "Reeco" Pumps. A child can operate them.

Over 40,000 "Reeco" Pumps are now in use.

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New York. Boston. Philadelphia. Montreal, P. Q. Sydney, Australia.

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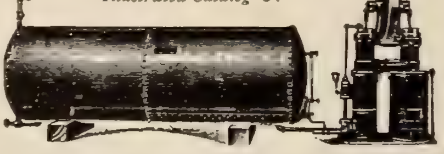

## Dahlias, Cannas and Gladiolus in Texas

IN THIS locality we have a sandy, fine and porous, but very rich soil. The sand has not had its fertility washed off by rain, as this is an arid section and plants grow only when irrigated. The soil will crust on top unless a large amount of humus is plowed into it.

For several years I have been trying out dahlias. I have experienced no trouble at all in getting them started and blossoming, but owing to the continual sunshine, the plants become dwarfed. None of my plants have grown over two feet high, although they have been given a great deal of water. On one plant, only two feet high, I have counted forty blossoms either in full bloom or still in bud, and yet blossoms have been cut off repeatedly.

Beyond growing cowpeas or velvet beans to plow under, I have used no fertilizer on the land. We have practically no winter here, and so, if tubers will form in the ground, we should have more and larger ones than growers farther north. Then it is very easy to slip dahlias; just cut off a piece, stick it in the ground, keep the soil wet and shade for perhaps a week, and you will have a new plant.

I have been very successful with growing cannas. From fifty plants bought a year ago, I sold 3,000 tubers this season, have fifteen or twenty fine varieties and shall have 25,000 to 35,000 tubers to sell next winter. They can be left in the ground until wanted by customers, which means a quick start.

Last year I also planted sixty gladiolus bulbs along the banks of an irrigation ditch, thinking it would be a good place for them. But I found that they could not be cultivated and were watered whenever water went down that ditch. I think they got too much moisture, but they blossomed beautifully and I got seventy bulbs and 295 bulblets, losing some by not taking them up completely (as the soil was hard on the ditch bank) and a few more by storing in too damp soil.

From watching them carefully I made up my mind that, in this warm climate, we could have two growing seasons; that I could plant in February, have them bloom in April and May, mature in June, keep them out of the ground until the end of July or the beginning of August, then replant, have blooms in October to mature in December, take up the bulbs and give them a rest until the following February. We usually have a light frost early in December but this would not hurt the maturing bulbs.

Accordingly, I planted what bulbs and bulblets I had, together with one hundred of the Butterfly gladiolus, on February 10th, and I planted them as I would onions, in a double row about five inches apart and about two inches deep. Each bulb germinated and bore beautiful flowers, but those that had been grown here for one season excelled those planted for the first time, in size of flower, texture and firmness of flower petals, and brilliancy of coloring. They were exquisite. I do not know whether this difference was due to the original quality of the bulbs — one was domestic and the other French — or to strong sunshine. But it is my opinion that the colors, here in our almost continual sunshine, are more brilliant than they were when I grew the same varieties in the North.

As the plants came up they were upheld by lines of string along the sides of the rows, and blossomed profusely, and when mature were dug up, with the exception of a few that were left to go to seed. I did not know as much then as I do now about the bulblets. I stored them where they would dry out, the same as the bulbs, and few of them came up. Then I planted them too far apart, so that the slender stalks were not protected from breaking down by the wind. But from eighty-five bulblets I got fifty-eight bulbs and about one hundred bulblets. From the one hundred foreign bulbs I got 133 bulbs and 1289 bulblets, and from the seventy domestic with the addition of 295 bulblets, I got 155 bulbs and 1233 bulblets. These bulbs are now stored in a dry place and the bulblets are in slightly moist sand. They should never be allowed to dry out.

I intend to try planting some of the bulblets in a flat of sand, putting them close together, making very moist and covering with burlap so

# The "Henderson" Method

All over the civilized world men are trying and testing and experimenting with seeds and plants day by day and year by year, spending thousands of dollars trying to improve what we already have, endeavoring to create new varieties, all without noise or notoriety. As an instance of this, the bush muskmelon which has this year astonished the world, represents nearly fifteen years of exact careful work, all freely given for the sake of the Henderson method.

The initial cost of the seeds themselves is the smallest part of the expense of your garden, although the quality of the seeds is by far the most important consideration.

Our exhaustive tests and trials before a stock is put on sale do much towards making sure that the gardener has at least started right, but perhaps the most unique part of the Henderson method is our after sale attention. This Henderson service, which is little emphasized, but very important, gives our customers the full benefit of the best knowledge of the horticultural world. As an instance of this,

## Our 1912 "Garden Guide and Record"

is a little handbook of comprehensive, clear, concise cultural directions and general garden information, that is one of the best and most valuable garden handbooks ever published. As a part of the Henderson service, it will be sent free of charge to any actual purchasing customer or if requested, will be sent free to all applicants for our catalogue under our special offer.

**Peter Henderson & Co.**
**35-37 Cortlandt Street**
**New York**

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# In Your Garden

Secretary of Agriculture Wilson recently made a statement to the effect that practically all the advanced prices which make up the increased cost of living go to the many handlers between the producer and the consumer.

In the present acute agitation of the high cost of living, there has not been a sufficient realization of the fact that every man holds a partial solution of this great question in his own hands. During the summer, half of your living expense is for things that should come out of your own garden. Improved methods and higher quality of seeds have made it possible to cultivate the small tract so that a plot 25x50 ft. with a reasonable amount of cultivation and planted with seeds of a tested quality such as Henderson's should supply all the vegetables required by a family of six or seven. To get the best results, it is necessary to have the best seeds. The sixty-four years of successful seed growing and selling that is behind every packet of Henderson's seeds should and does make them the best that it is possible to buy. Henderson's are tested seeds.

## SPECIAL OFFER

### Our 1912 Catalogue—Everything for the Garden

A book of 204 pages, over 800 illustrations; color plates, etc., the biggest and best we have ever published, will be mailed on receipt of 10 cents. In addition we will also mail our Henderson collection of 6 Henderson's Specialties, in a coupon envelope, which will be accepted as 25 cents on any order of one dollar or over.

**Peter Henderson & Co.**
**35-37 Cortlandt Street**
**New York**

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# *Our Motto:* Prices as Low as Consistent With Highest Quality

**Plants that are sure to grow** mean much to the planter; for he may save a year's time which is of more value than first cost of the plants.

**Roses.** Irish stock, grown to our order by Dickson & Sons. Thousands of 2 and 3 year plants in 200 varieties.

**Evergreens.** Thousands of specimens in sizes from one to ten feet, in seventy hardy varieties.

**Evergreen Shrubs.** Mahonia, Mt. Laurel, best and hardiest Eng. Hybrid Rhododendrons, Catawbiense and Maximum in car lots.

**Deciduous Trees.** In sizes up to 20 feet. Maple, Poplar, Linden, Willow, Birch, Dogwood, Magnolia and other flowering trees.

**Flowering Shrubs and Vines.** We make a specialty of large sizes for immediate effect in addition to usual sizes.

**Hardy Perennials.** Our stock of old-fashioned flowers has become famous. We were among the first to recognize the value of this material and have planted many gardens.

**Fruit.** Special offer in large Apple, Cherry, Pear, Grapes; a grand lot of dwarf fruit trees, all transplanted.

**New catalogue, No. 30, out in February, will give sizes as well as prices and no charge is made for boxing and packing. Special prices will be quoted on large orders and car lots.**

**ROSEDALE NURSERIES** S. G. HARRIS
TARRYTOWN, N. Y.

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# "That Evergreen Windbreak and Screen is the Handsomest Thing about the Place"

A man built a fine house last summer, and spent a lot of money fixing up his place. In front was a shelterbelt of evergreens that hadn't had a bit of care for ten years. One day the owner was apologizing to a visitor for its appearance when he was surprised to draw the visitor's fire in the remark above.

## Evergreens Add to the Value of Property

Windbreaks make houses warmer, screen off objectionable views, insure privacy, make good fences and give paint twice the life on buildings. They protect gardens, orchards and fields from destructive winds and from cold. *Best of all, they increase the selling value of a property.*

## Learn How to Build Windbreaks

Get our 56 page Planter's Guide for 1912. We are Evergreen Specialists, and we grow more evergreens than any other firm in the world, as well as shade trees, shrubs, flowers and hardy fruit trees. Our book and list of 50 Great Bargains are free to intending planters. Don't wait till spring —SEND NOW for them.

**D. Hill Nursery Company, Evergreen Specialists**
**Douglas Avenue Dundee, Illinois**

**Dwarf Fruit Trees**

for small yards are our specialty. This year, **and at this time,** we offer a most comprehensive choice. It is complete now.

Knowing our stock to be of the highest quality, we wish to tell you about it more fully. Altho you may be flooded with nursery catalogs at this season, we have one of unusual interest to send to you **FREE** by return mail. It treats exclusively of dwarf fruit trees and plants suitable for small yards. Write—

**The Michigan Nursery, Inc.**
**Winkworth & Sons**
**MONROE, Michigan**

*We have been established over 60 years*

***If*** **you contemplate Early Vegetables do not fail to plant some seed of**

***The* Don Tomato**

If planted now, by June 25, you will have the Finest Clusters of Medium Sized Solid, Perfect Tomatoes.

Do not judge quality by the quantity. "Quality and quantity never go hand in hand."

25c. in Stamps will bring you a Packet of this Tomato (enough for 100 plants) also our New 1912 Catalogue, which you cannot afford to be without.

**WEEBER AND DON**
***Seed Merchants and Growers***
**114 Chambers Street New York**

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RUGS

**"You choose the colors, we'll make the rug."**

**THREAD and THRUM RUGS** are made seamless, of pure wool or camel's hair, in any width up to **16 FEET** and in any length, color or combination of colors. 65 regular shades—any other shading made to match.

Send for color card and name of nearest dealer.

**Thread & Thrum Work Shop**
**Auburn, N. Y.**

**TEAS**
**Everblooming Hydrangea**

As lovely and showy as *Hydrangea Paniculata*, but blooms all summer, instead of for only a few weeks. Great clusters of pure-white flowers, often a foot across. Entirely hardy; makes handsome specimen for lawn. We were original introducers, and offer genuine stock.

**Ask for "A Choice Little List"**

Attractive booklet telling about valuable Shrubs, Perennials, Iris, etc., for spring. Nearly 75 years' experience in horticultural work assures high quality; tell us about your garden *now.*

**E. Y. TEAS & SON, Iris Boulevard, Centerville, Ind.**

THE GREATEST DISCOVERY OF MODERN TIMES.
NATURES PLANT FOOD
BONORA
TRADE MARK
BONORA CHEMICAL CO.
584 BROADWAY. NEW YORK

**BONORA the MAGIC PLANT FOOD**

the greatest and most powerful fertilizer in the world. Use it in your cold frames and give your vegetables and flowers an early start.

Use Bonora on your early vegetables and they will mature two to three weeks earlier and twice the size.

BONORA will make your roses bloom as if in the tropics; results are simply marvelous.

Descriptive circular sent on application. Order direct or from your dealer.

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| 1 lb. | making | 28 gal. | postpaid .65 |
| 5 lbs. | " | 140 " | 2.50 |
| 10 " | " | 280 " | 4.75 |
| 50 " | " | 1400 " | 22.50 |

**BONORA CHEMICAL CO.**
**515 Broadway New York City.**

that the surface will not dry out and see if I cannot get at least fifty per cent. of them to turn into genuine bulbs.

Gladiolus are wonderfully prolific; by actual count one bulb had seventy-five bulblets attached to it. I noticed that those which made more new bulbs did not make many bulblets, and vice versa.

Usually I cut off the flowers as the first blossom began to open, but I got careless toward the end of the season, and I left many flowers on the plants. They had fewer bulblets and bulbs than the ones whose flowers were cut off early. For commercial raising, I believe the flowers should be cut off as soon as they are open enough to identify. The flôwers from the same bulb always stay the same, I am told but one always wants to save some specially beautiful strains, and then the bulblets can hardly be kept separate and these should be sorted out in some way. This year, I tried putting written tags on them, but it was not a success. My next experience will be with brightly colored strips of cloth tied to the plants right above the ground.

South Africa is the native home of the gladiolus, but it has been crossed and experimented on in France and Holland and in the North of this country. It looks as if experimenting here in an irrigated country with a climate similar to its native habitat should produce even finer results than in a climate to which it is is not accustomed.

Texas. Eltweed Pomeroy.

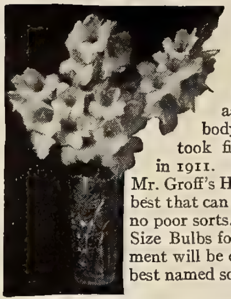
GARDEN
PUBLICATIONS

A Flora of California. By Willis Linn Jepson, Ph.D., Cunningham, Curtis & Welch, San Francisco. Illustrated with many original figures. Part I.: Pinaceæ to Taxaceæ, pp. 33 to 64; price, 90 cents. Part II.: Salicaceæ to Urticaceæ, pp. 337 to 368; price, 80 cents.

An important and scholarly work issued in parts. The first part describes the big trees and other Titanic evergreens of the Pacific Coast. The second describes the willows, poplars, oaks, etc. The text is enlivened by full-page, half-tone pictures of the noblest trees and most interesting plants. The new spirit is shown by many ecological observations which are invaluable to planters on the Pacific Coast, by showing the best and most permanent plants for every soil and climate, e. g., mountain slopes, valleys, clay, sand, etc.

Animal Competitors. By Ernest Ingersoll. Sturgis & Walton Co., New York, 1911; pp. 320; 34 illustrations from photographs and drawings. Price, $.75 net.

As we read of and see illustrated in this book, the vast amount of damage inflicted on farms all over the country by the various forms of rodent pests, we are led to the realization that phases of the "scientific management" of which we hear much, could, with great benefit, be directed toward the control of the uninvited tenants of the farm. Mr. Ingersoll has made this very outcome possible by bringing together, in interesting, clear and comprehensive form, much scattered material from Government reports and other sources, dealing with the economic value of such animals as the beaver, gopher, squirrel, fox, deer, rat, mouse, etc. And with this he has incorporated directions for the most effective warfare against those agencies that are distinctly injurious, and for the economic protection and multiplication of those that are of use, often of unappreciated value, to the agriculturist.



**Modern Gladiolus**

No other flower, at any price, will give you as much satisfaction as the Modern Gladiolus and anybody can grow it. My collection took first premium at Iowa State Fair in 1911. While I still make a specialty of Mr. Groff's Hybrids, I am constantly adding the best that can be had from other growers and use no poor sorts. I again offer Thirty Flowering Size Bulbs for 30c. postpaid, but the assortment will be different every time. Catalog of best named sorts and mixtures sent free.

**GEO. S. WOODRUFF**
**Box B. Independence, Iowa.**

**Millions of Trees**
**PLANTS, VINES, ROSES, ETC.**

The oldest, largest and most complete nursery in Michigan. Send for catalog. Prices reasonable

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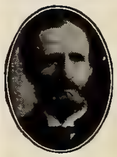

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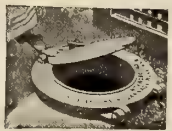
HAVE sweet peas that are finer than your neighbors'. The blossoms of this new Spencer variety are immense, beautifully formed and have 4 to 5 blooms to the stem. You'll be glad when you see them growing in your garden, post-paid,.......Pkt. **15c**

**Kaiser Mixed Pansies** New German Pansies—extra large size—beautiful, soft, solid and variegated colors, profuse bloomer. This mammoth variety we import direct. Send today for a packet........... **25c**

**PACKET OF EACH, POSTPAID TO YOU, 30c**

**FREE** A copy of our beautifully illustrated catalog of Garden and Flower Seeds.

**Guthrie-Lorenz Co., 625 Grand, Des Moines, Ia.**



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**Two Things You Need**

**FIRST:** The only Sanitary method of caring for garbage, deep in the ground in metal receiver holding heavy galvanized bucket with bail. Garbage cannot freeze. Avoid the battered can and scattered refuse resulting from removal of frozen contents. Health demands it.

THE STEPHENSON
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**Underground Garbage Receiver**
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**SECOND;** This clean, convenient way of disposing of ashes from furnace or hot water heater, cellar and yard refuse. Fireproof. Flush with floor. Abolish the old ash barrel.

**Nine years in practical use.**
**IT PAYS TO LOOK US UP**
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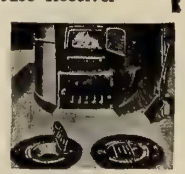

**Easy to sweep into**

**This Tool Will Pry Into Anything**

**It lifts the lid of a packing case—rips up a floor—takes down a scaffold—pulls contrary nails—pulls them straight. Pulls nails as high as a man can reach. Does things no other tool *can* do—things *you* need done. Pays for itself over and over again in nails and lumber saved.**

**Two sizes, 14 in. and 23 in. Shopkeepers, mechanics, manufacturers, electricians, householders—*this is your special tool*—one you need to keep handy.**

**BONNER Pry Bars**

like other "Bonner" tools, are drop forged from special steel and finely tempered. Ask your dealer for a "Bonner" pry bar. If not with him, will ship you direct. Send us your dealer's name.

*Also makers of Bonner Auto Kits, Bonner Farmer Kits, Bonner "Victor" Chain Wrench and other special purpose tools.*

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# Dahlias

From the largest collection in America you have the privilege of selecting when you have our 1912 Garden Manual before you. The Manual has this season been rewritten and new illustrations used to make it stand in the front as a place to find

## SEEDS, BULBS, PLANTS
FOR YOUR GARDEN

*The Newest in Flowers. The Newest in Vegetables. The Best in Spring Flowering Bulbs. Ornamental Shrubs and Fruit Trees. Perennial Plants and Sundries for the Lawn and Garden.*

This Garden Manual is an addition to any collection of reference books. **Write us now and we will mail our seed annual free.**

**Dahlias** *We want you to know more about our collection, and we make this offer to mail to any Post Office in the United States.*

**TEN DAHLIAS FOR $1.00**

Your selection as to whether they shall be Cactus, Decorative Paeony-Flowered, Show or Single. Our selection as to varieties, all with correct names, mailed to you for $1.00.

If interested in Dahlia or Gladiolus ask for our special catalogue. Over 1,000 varieties to select from. Mailed free for the asking.

**FOTTLER, FISKE, RAWSON CO.**
**Faneuil Hall Square BOSTON**

# HALF AN ACRE IN HALF AN HOUR

with garden tools like those shown here, with their many attachments for all kinds of special work, you can accomplish more in half an hour than in half a day by the old methods.

The light, yet strong, labor-saving implements are so perfectly made that any one can push them with ease. Their adaptability to numerous requirements is astonishing. They reduce labor and increase the garden's yield.

**No. 1**
**Double and Single Wheel Hoe**
**Price $7.00**

## IRON AGE

**No. 6**
**Hoe and Seeder Combined**
**Price $12.00**

Any one of their numerous attachments for hill seeding, drill seeding, plowing, raking, hoeing, disking, hilling, weeding or mulching, either as single or double wheel tool, can be adjusted in a few minutes. Conversion to a Single Wheel Hoe is an exclusive feature. 16 inch steel wheels, steel tube frame and braces, malleable fittings and attachments give them combined strength and lightness not found in other garden tools.

Here are tools that will work for a dollar a year. They are but two of many Iron Age labor-saving tools, some of which should make up the equipment of every farm and garden.

See them on your local dealer's floor. Do it today.

A postal request will bring to you our set of booklets, profusely illustrated, and describing our complete line of garden, orchard and field tools. Write today.

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**Box 535**
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## *We'd like to do your Printing in this 40-acre Garden*

THE COUNTRY LIFE PRESS is equipped to promptly and efficiently execute orders for all kinds of printing and binding.

Thousands of photographs from our own files are available.

Especial attention is given to color work of all kinds.

Members of our staff will gladly call upon request, to assist in planning and laying out any work desired.

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IMMEDIATE DELIVERIES ARE MADE DAILY TO NEW YORK BY OUR OWN AUTOMOBILE TRUCKING SERVICE

# 6 Glorious Roses
**MAILED POSTPAID FOR 25c**
**ALL WILL BLOOM THIS SUMMER**
**Hardy, Everblooming, Guaranteed True to Name**

## BARGAIN OFFER

**CAROLINE TESTOUT**—Glorious pink.
**PAULA**—Golden yellow.
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**LADY URSULA**—Flesh pink.
**KAISERIN AUGUSTA VICTORIA**—Best white.
**CLIMBING BABY RAMBLER** — Blooms until frost.

Order today—You will get the finest roses ever offered.

## DAHLIAS

**Six Colors Sure bloomers All prize winners**

**QUEEN VICTORIA**—Yellow.
**STORM KING**—Snow white.
**FLORADORA**—Deep crimson.
**SYLVIA**—Pink.
**COUNTESS OF LANSDALE**—Deep rosy salmon.
**MATCHLESS**—Scarlet.

Dahlias are the coming flower and used for all occasions. **One tuber, any variety, 15 cents. Any 3 for 40 cts. The 6 for 75 cts. postpaid.**

**Dahlia Seed**

**New Century, Cactus, Black, Striped, Double and Single** of all colors. **For 10 cents I will send you 50 seeds** — enough for a fine Dahlia Garden. I catalog nearly 400 roses, all the newest and best. Dahlias, Ferns, Palms, all sorts of house plants, etc. Catalog free.

**MISS JESSIE M. GOOD**
***Florist and Dahlia Specialist.*** **Box 251, Springfield, Ohio**

**This is the Flower Garden From Which Wyomissing Nurseries Had Their Start**

I love this picture because it links together my dearest possessions—family, friends and flowers. In my book I call it "A quiet afternoon—the world within sheltered from the world without." Wyomissing Nurseries have grown from the flower garden which this picture shows as it was last summer.

It is good to feel, as I am about to enter on the New Year, that plants from Wyomissing Nurseries afford others something of the pleasure they give me. There's a kindly "kinship" between my big gardens at Wyomissing and the other gardens that my plants have gone to join. The letters I receive from my customer-friends are a great pleasure to me—one women struck the key when she wrote.

**"You do Things in a Different Way – as Though You Love Your Plants"**

She had had experience with the plants of Wyomissing, and wrote from a conviction that mine is no common nursery—as; indeed it is not. It is a *business* that has developed from my love for growing things, and my desire to produce certain plants unusually well. From the modest groups of plants and shrubs that I tended with loving interest in my spare moments, this business enterprise has grown, year by year, until I have come to know hundreds of people who love the royal group of hardy plants that I grow, and whose demands have literally forced me to increase my gardens again and again, and abandon other interests to give this particular "hobby" the proper care. That is the "why" of Wyomissing Nurseries.

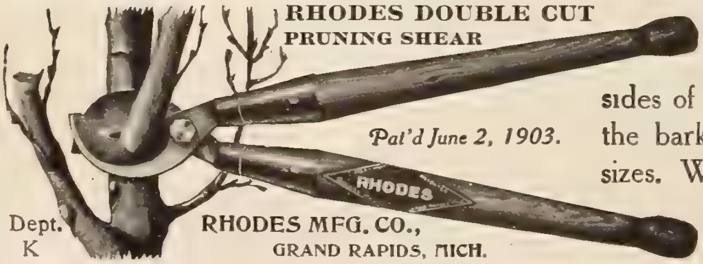
**I Cordially Invite You to Write For Farr's Book of Hardy Garden Plants—**

if you have a hardy garden or plan to make one. I have prepared a complete new book describing the gems of Wyomissing Nurseries, and my friends pronounce it one of the handsomest they have ever seen. The whole book breathes the spirit of Wyomissing Nurseries and my very earnest wish is to be of help to you in establishing a garden that will be the pleasure to you that mine is to me. It tells of Irises, Peonies, Delphiniums, Phloxes, Oriental Poppies, Aquilegias, and a host of other grand Hardy Plants, in a way that will make you love and want them, too. Don't merely say "Please send me your book" but tell me about your garden, what you have done, and what you want to do. If I can help you with your garden, I want to do it.

**BERTRAND H. FARR, Wyomissing Nurseries** 643-D PENN STREET, READING, PENNA.

Send for Photo Pictures and prices of our beautiful roses. FREE.
**PARK ROSE GARDENS** Altoona, Pa.

**STEVENS-DURYEA**
THE IDEAL MOTOR CAR OF THREE-POINT SUPPORT
*Send for Catalogue*
Stevens-Duryea Co., Chicopee Falls, Mass.



**RHODES DOUBLE CUT PRUNING SHEAR**

*Pat'd June 2, 1903.*

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay Express charges on all orders.

Dept. K **RHODES MFG. CO.,** GRAND RAPIDS, MICH.

*Write for circular and prices*

## Yellow Roses for the West

I HAVE six bushes of Lyon Rose, which I obtained the year it was introduced. None of these bushes is over two feet and a half high. Although I have treated them in all the ways I know how to get growth and profusion of bloom, I have failed.

One year I budded three standards on the *Rosa canina*, and obtained a very satisfactory growth and good flowers. I have already put buds on bushes of the Manetti, and as soon as I can get satisfactory buds from Lyon Rose, I shall bud some more half standards on the *Rosa canina*. The largest and best Lyon Rose I obtained last season was from one of the buds on the *Rosa canina*.

As to yellow roses: Harry Kirk grows well, and is a fine color the morning it blooms, but by night practically all the yellow has faded out of it, even when I protect it from the sun with a Japanese umbrella.

I find Franz Deegen, although not a large flower, a very satisfactory rose. The best yellow Tea, or Hybrid Tea, to maintain its yellow is Georges Schwartz. It is classed a tea. I find Monsieur Joseph Hill the best of all yellow Hybrid Teas. It has fine foliage, and is practically free from fungoid diseases. I have ten bushes of it. I have had a number of roses this year which measured approximately not less than six inches in diameter.

Mme. Melanie Soupert is one of the most magnificent roses to bloom at Portland; of course, it is only good as an opening bud, or as a partly opened flower. I have had some specimens this year which were approximately seven inches in diameter. The color fades out easily while M. Joseph Hill seems to get a more intense yellow as the flower opens.

From the habit of growth, the color and form of the leaves, and a certain similarity in the color of these two it is easy to see that Pernet-Ducher originated these roses from the same character of hybridization.

I have tried several of the roses introduced in 1910. Those which have bloomed the most satisfactorily are Mrs. Foley-Hobbs, Lady Pirrie, Ethel Malcolm and Mrs. Maynard Sinton. I am somewhat disappointed in the Marchioness of Waterford; it has made a fine growth, and I have had blooms from several bushes. So far as I am able to judge, it is a rose very similar to Madame Caroline Testout. Mrs. E. J. Holland has bloomed merely as a pink rose, without any special characteristics. My bushes of Alice de Rothschild have made fairly good growth, but have not had any very satisfactory blooms up to this time.

Oregon. FREDERICK V. HOLMAN.

## My Hotbed

THE illustration shows a view of my hotbed taken about two years ago while it was being cleaned before being stocked with the winter crop of celery.

I always have a depth of five feet eight inches of manure from the bottom of the pit to the sash or glass at its greatest depth, which should be on

the north side. The hotbed shown in the illustration is made of concrete blocks and cemented bottom, a kind of construction necessary to the maintenance of heat. The last two years I managed to keep a temperature of seventy during the months of March, April and May.

New York. MOE SPIEGEL.

$1000.00 PER ACRE
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# You Can Make A Living and Put A Thousand Dollars A Year in Bank From Five Acres of Berries

On five acres you can produce a gross income of $2,000 a year GROWING BERRIES. $500 to start and your time will give you a good living and $1,000 net. For the average investor there's no project better, for the average man there's no occupation in which he can do as well. The returns begin at the end of the first year.

### There's No Secret About It — Just Intelligent Work

The main essentials for success in growing berries are the ideas and the plants. Put berries on ten acres, care for them right, and thev will net more than a hundred acres devoted to grain and stock. If you don't have land, buy or rent some, and plant berries. It will pay for itself in two or three years.

### Berries That Net $1,000 An Acre

Berrydale Experiment Gardens have sifted the merits of hundreds of berries. The very best dozen or so are described in the Berrydale Berry Book — all the old berries, and the New Himalaya — the berry that grows like an apple tree and bears ten tons of berries on an acre of thirty months old plants.

Send for the book; it's free if you ask now.

**BERRYDALE EXPERIMENT GARDENS**
A. MITTING, *Owner*
GARDEN AVENUE HOLLAND, MICHIGAN

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Come to Florida and Farm all the Year

From photo of Florida farm made February 1911

BE your own master. Get health, strength and financial independence in working for yourself out of doors every day in the year. You can do it on Terrell Lands in South Florida. Cost of living goes down instead of up. No rent to pay. No heavy fuel bills. No winter clothing to buy. Advancing prices of food stuffs mean more instead of less ready cash for you. Living becomes a daily delight. You can work better, feel better, be better amid the beautiful surroundings in this perfect climate.

### Ten acres will make you independent

You can work them every month in the year, raising annually two to four crops which will return you $150 to $1000 per crop per acre. You can insure the future of yourself and your family with a pecan nut grove. It will bear for more than 100 years and the returns exceed those from almost any other crop. Terrell Lands are in the heart of the nation's "truck garden" and the finest citrus fruits in the world are grown here. Four railroads cross them and eight growing towns are on or adjoin them. All stockholders of this Company have bought lands from it; many of them will develop their properties and live at Rerdell.

Every purchaser has six months in which to investigate the land, either personally or through an authorized representative, and if not entirely satisfied money paid will be refunded.

We have a beautifully illustrated book for you. It will tell you all about Terrell Lands and how you can obtain a permanent or a winter home there at little cost. It will tell you of a safe, sound investment that will net you large returns. We will send you a copy FREE for the asking. Write today.

**Terrell Land & Development Company**
Box 116 Rerdell (Via Terrell) Florida

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# INTELLIGENT SEED BUYING — *BETTER* GARDENS AND CROPS

Every year, your garden or farm ought to be distinctly *better*. Progressive seedsmen, who are putting their best thought into their profession, are producing *better* seeds each year, and, of course, *better seeds mean better crops*.

The Field seed business is growing because it is builded on the sale of better seeds. I won't sell seed unless I'm reasonably sure that it's the best to be had — *I've got too much at stake*. I am a practical gardener and farmer myself and it's to my greatest interest to produce seeds that I know will make bumper crops.

### *My Vegetable Seeds Grow the Prize-Winning Crops*

They are carefully and constantly "bred up" — and every lot must pass several tests before any of it can be sold. I don't want my customers to have seeds that aren't good enough for me.

My catalog tells about the best seeds for *you*. Send for it today and let's know more of each other. You may be a thousand miles away, but the mails will bring us close together.

*HENRY FIELD, President, Private Desk 101*
**HENRY FIELD SEED COMPANY, Shenandoah, Iowa**

*Sunlight Double Glass Sash need no covering even in zero weather*

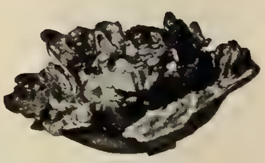
*Grow fresh vegetables for your table and to sell*

# Have Spring when you want it.

# Have it NOW!

*Have tomatoes to be proud of*

## All you need is a plot in your garden covered with Sunlight Double Glass Sash. Get them NOW!



*Have fresh lettuce for your table*

You will be surprised to see what fine, strong plants you can grow. Your flowers will be ready to pluck and your vegetables to eat six weeks ahead of the season. And how much better they are when they are not commonplace—when they are your own achievement!

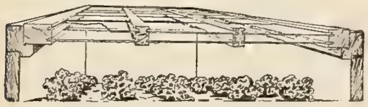
### Sunlights Eliminate the Drudgery

After the sash are ordered and received let the gardener make the hot-bed. The pit frame is put in and partly filled with heating material; then the top frame is set on; then the soil is shoveled in and made fine and ready; then the seed is sown or the plants set in the warm earth; then the sash are laid on the top frame and practically all is done.

**SUNLIGHT Double Glass Sash** TRADE MARK **for Hot-beds and Cold-frames**

### Complete in Themselves

Thereafter, the two layers of glass do nearly all the work. No boards, mats or other covers have to be lifted on or off. A $\frac{5}{8}$ inch cushion of dry air enclosed between the layers of glass makes a transparent blanket impenetrable by cold but admitting the light with its heat rays.



*The double layer of glass takes the place of mats and boards*

The gardener's main work is preparing the bed or beds and is soon done. The rest of the work—mainly the airing of the bed by propping up the sash on warm, bright days—anyone—even a child—can do.

### Reward in Pleasure and Profit

Lettuce, radishes, onions, greens and the like will grow right off to maturity in the bed and in their order, cabbage, cauliflower, beets, tomato, pepper, cucumber, melon and sweet potato plants (and many others in each class) will grow ready to go into the field as soon as the season outside permits. Whether for pleasure or profit you will be rewarded with ten times the returns that come to those who have no glass and wait on the weather.

Cut off the coupon, write your name and address on it and mail to us with 4 cents and we will mail you our free catalog, together with Prof. Massey's booklet on hot-beds and cold frames. Our catalog is free.

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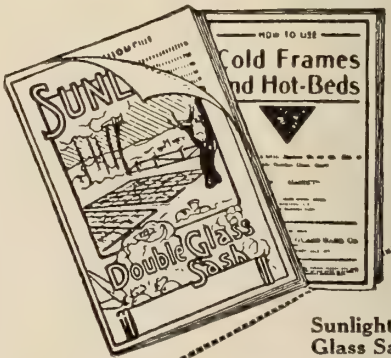

Garden

**Sunlight Double Glass Sash Co.
Louisville, Ky.**

Gentlemen:—Please send me your free Catalog. Enclosed is 4 cents for Prof. Massey's Booklet.

Name ..................................

Address ..................................

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You obtain
every possible
advantage by
sowing

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The best,
the purest, and
the most profitable

because more than a century has been spent in attaining these qualities by carefully breeding and selecting the strains.

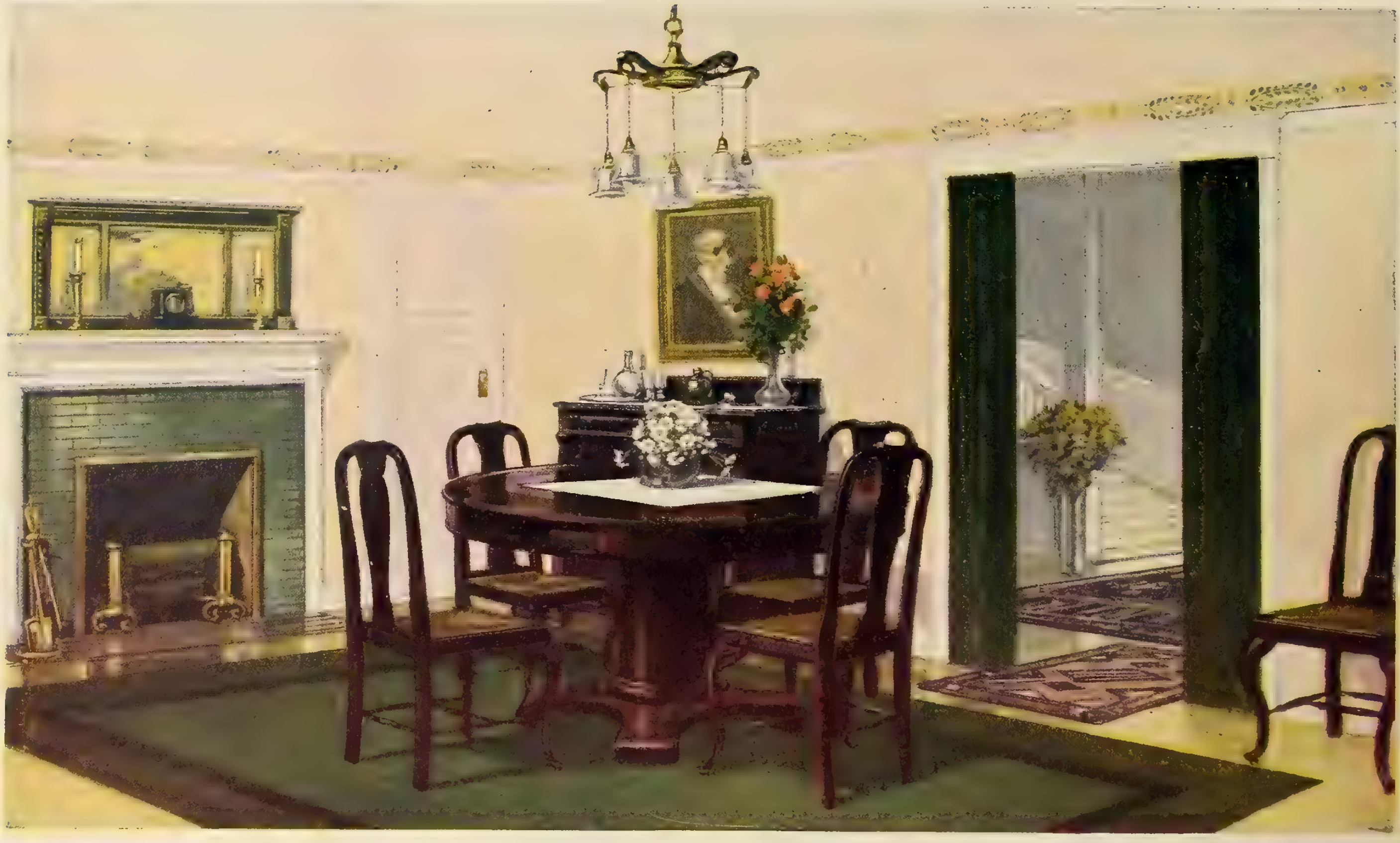
¶ Over 500 GOLD MEDALS and other honours have now been awarded to the produce of Sutton's Seeds at the leading exhibitions throughout the world.

¶ Complete lists of all the finest varieties of Flowers and Vegetables will be found in SUTTON'S GARDEN SEED CATALOGUE for 1912. Write at once for a copy to

**SUTTON & SONS**
The King's Seedsmen, **READING, ENGLAND**

**Sutton's Giant Cyclamen**

**Sutton's Forcing Dwarf French Bean**



HOW TO GET THIS EFFECT WITH SHERWIN-WILLIAMS PAINTS AND VARNISHES
Ceiling and Cove—S-W Flat Tone Ivory  Wall—S-W Flat-Tone Cream  Stencil No. 96—Leaves, Olive Lake, reduced; Flower Forms, Permanent Crimson Lake and Indian Yellow, reduced  Woodwork—S-W Enamel White  Floor—Natural, S-W Marnot

# Our "Style Book of Home Decoration" shows how to decorate elaborate or simple homes with Paints and Varnishes

THIS Portfolio contains 20 plates in colors (two of which are reproduced here), showing different treatments for all the rooms found in most houses, together with a large number of pleasing color combinations for outside painting. With each color plate are carefully worked out specifications showing just which Sherwin-Williams products should be used to produce the effect shown.

This Portfolio is sent free upon request. Send for it today whether you plan building, remodeling or decorating a single room—even the kitchen.

## Sherwin-Williams Flat-Tone

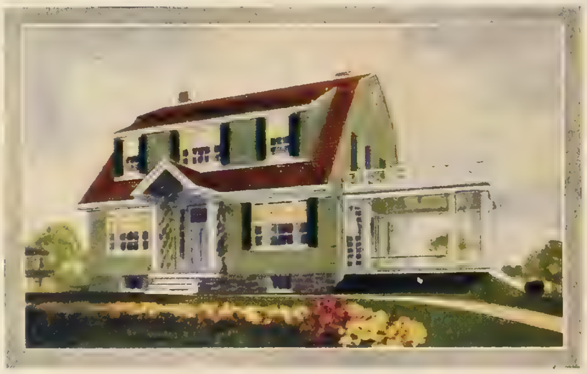
THIS is a paint for the artistic yet economical decoration of interior walls, ceilings and woodwork It produces flat effects that are soft and rich. It is easily applied, does not streak, can be washed and cleaned without injury and is made in 24 beautiful shades.

The ceiling and cove of the interior shown above were produced with Sherwin-Williams Flat-Tone Ivory and the walls with Sherwin-Williams Flat-Tone Cream.

## The Up-keep of Your Home

A SMALL investment each year in Paint and Varnish will keep everything in and about the home spic and span. The walls and woodwork, the floors, the furniture, etc., can be kept in the best of condition by the occasional use of one of the Sherwin-Williams Brighten-Up Finishes, a complete line of Paint and Varnish Products for use about the home Tell the local Sherwin-Williams dealer what you wish to do and he will give you the Paint or Varnish best suited for the purpose.

Write for the Brighten-Up' Booklet B 68.



## Sherwin-Williams Paint (Prepared) S W P

is a most durable and most economical paint which gives uniformly good results. S W P is made from pure lead, pure zinc, pure linseed oil and the necessary coloring pigments and driers thoroughly mixed and ground in scientific proportions to insure best results. It spreads easiest under the brush, saves the painter's time, and covers the greatest number of square feet to the gallon. It is made in one quality only, the very best, and can be bought in 48 colors together with black and white. The body of the house shown here is painted with S W P No. 358; the trimmings and sash are S W P Gloss White, and the porch ceiling S-W Kopal Varnish.

## Sherwin-Williams Enamel

A HIGH quality white enamel of splendid working, flowing and drying qualities. Gives a lustre that remains permanently white and will not crack or mar. The woodwork of the dining room shown here was painted with S-W Enamel White.

# SHERWIN-WILLIAMS PAINTS & VARNISHES

Sold by dealers everywhere. Ask your local dealer for color cards and full information
For the Special Home Decoration Service write to The Sherwin-Williams Co., Decorative Dept., 657 Canal Road, N. W., Cleveland, Ohio

THE COUNTRY LIFE PRESS, GARDEN CITY, NEW YORK

MARCH
1912
Vol. XV. No. 2

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Raising Flower Seedlings
Growing China Asters
Starting Vegetables Indoors
Pruning for Better Fruit

15c.
$1.50 a Year

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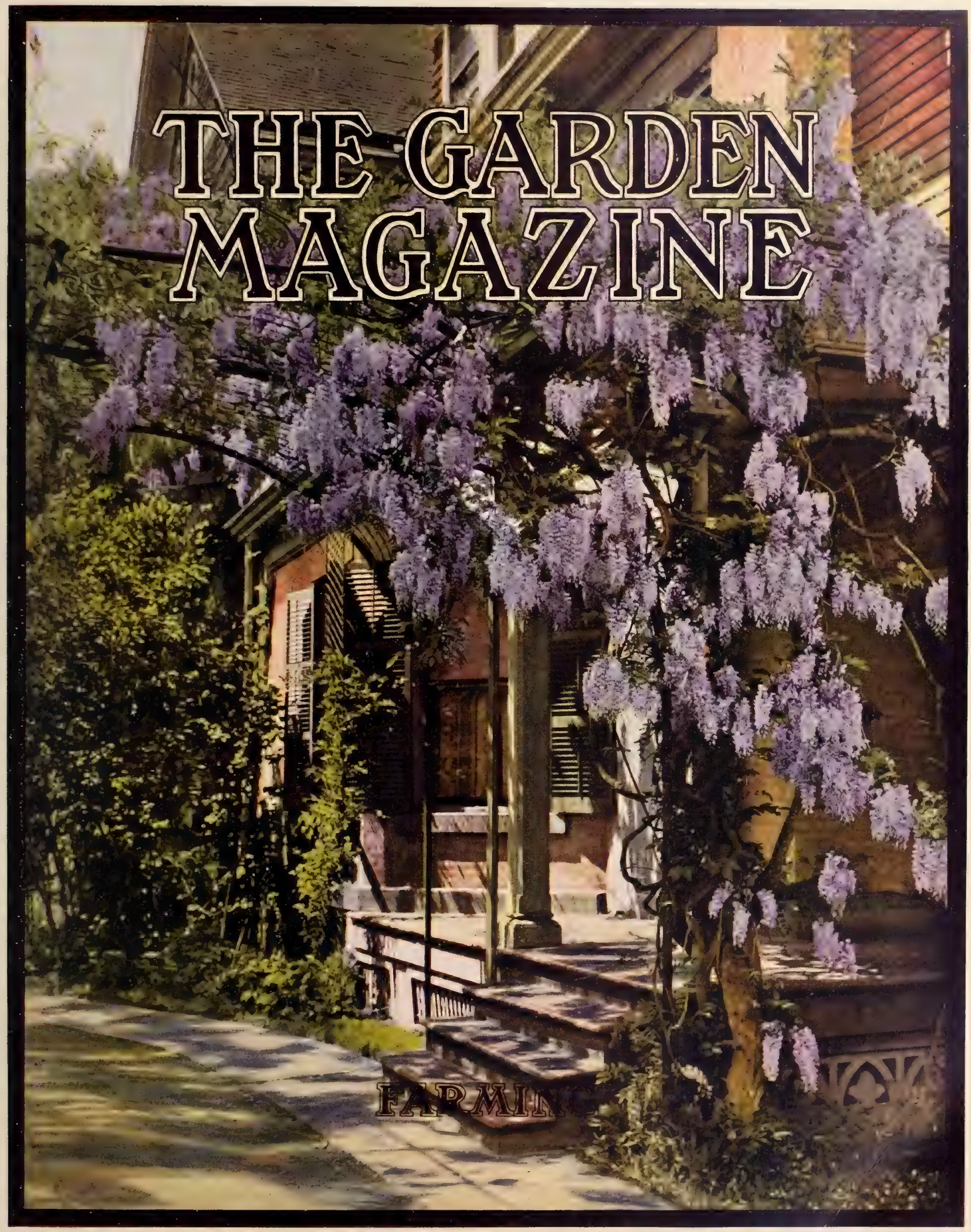

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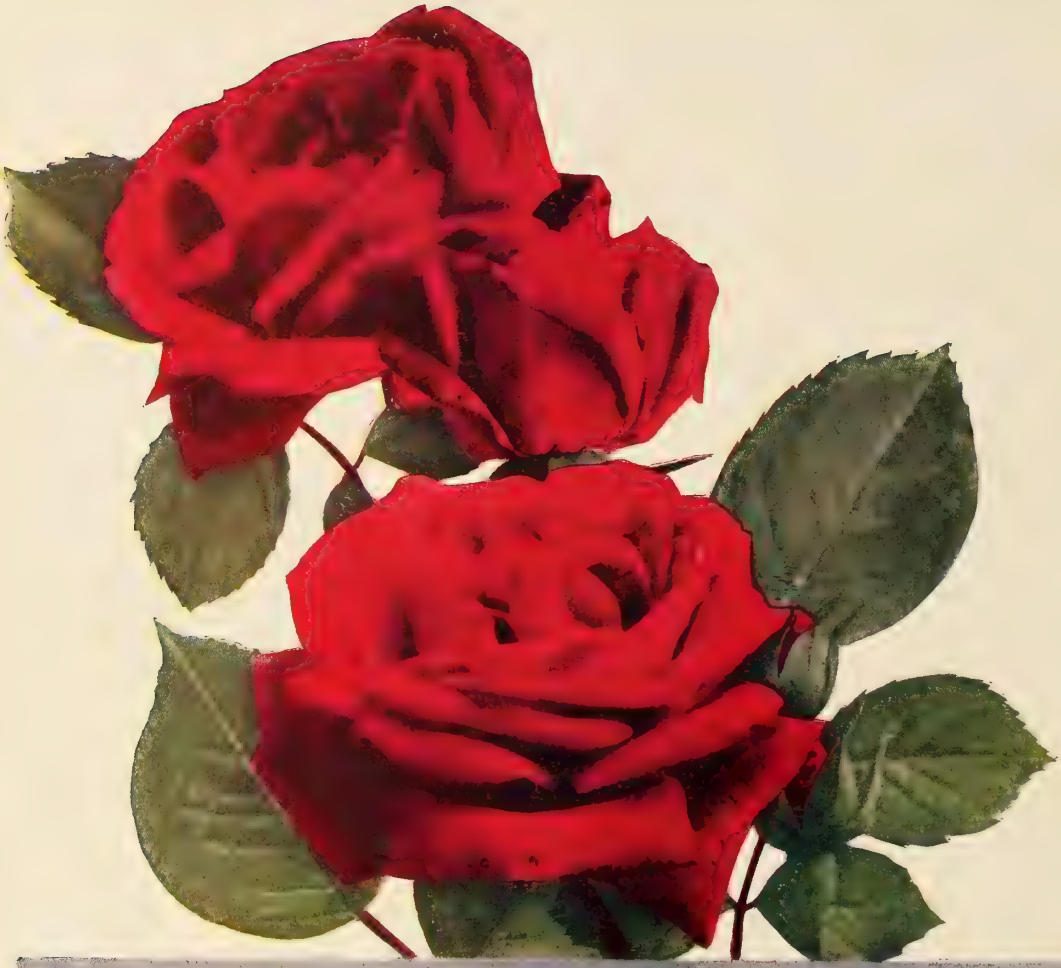
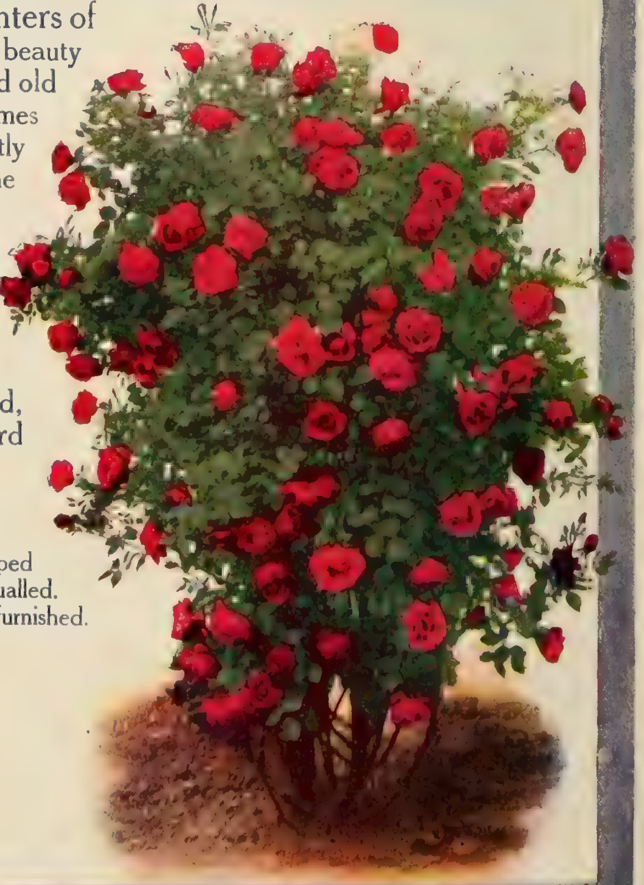


# Climbing American Beauty Rose

The American Beauty Rose
in all its glory and fragrance,
but hardy as an oak.

NOT the small, ordinary climbing rose, but real American Beauties—big beautiful, deep red roses, measuring 3 to 4 inches in diameter, each on separate stems. Fragrance that no rose on earth can surpass. Beauty equalling the finest American Beauties grown. Hardiness that withstands the severe winters of the north. Such is this new queen of roses. The Climbing American beauty is the result of a cross between an unnamed seedling and the grand old American Beauty. One plant of this new rose produces twenty times as many blooms in June as its pollen parent and blooms frequently throughout the growing season. Has beautiful, lasting foliage. The leaves are large, bright and glossy and remain on the bush all summer. They are not burned by the sun and give a most pleasing, ornamental appearance at all times. Grows magnificently in bush form. Unequalled as a pillar rose. Can be trained successfully to trellises, pergolas, porches and to fences as a border rose.

We have a limited number of one-year plants which we will send, carefully packed, postpaid, for $1.00 each. No rose lover can afford to ignore this offer.



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For the improvement of country estates and suburban homes is thoroughly equipped and in charge of a competent designer. Our trees, shrubs and vines are unequalled. Water color sketches and planting plans carefully prepared and estimates furnished. Write us if you wish to consult our representative when next in your vicinity.

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PHILADELPHIA OFFICE, STEPHEN GIRARD BUILDING

# BOBBINK & ATKINS

## New Hybrid Giant-Flowering Marshmallow

**HIBISCUS.** The old Greek name for Marshmallow used by Dioscorides, the famous Greek physician and botanist living about the year 100 A.D. The Marshmallow, or Rose Mallow, (as it is sometimes called) has been known ever since the discovery of America and has always been admired by all lovers of flowers. But it was not until a few years ago that we conceived the idea of improving this old-fashioned hardy plant and began to carefully study the possibilities of creating an entirely new family of Hibiscus, and those who have seen our plants in flower know how well we have succeeded, as many days last Summer we estimated that not less than one hundred-thousand flowers were open at one time.

The first year we hybridized several thousand flowers and produced some very wonderful Hybrids. Since that time we have constantly improved the original Hybrid until now, we believe, we have them at the highest state of perfection, many flowers measuring 10-12 inches in diameter and varying in color from the purest white to the darkest crimson.

We can highly recommend our New Giant-Flowering Marshmallow for all kinds of plantings; they appear to be perfectly at home in every kind of position, growing with the same amount of vigor and health in swampy or dry places. They are perfectly hardy and well adapted for naturalizing or back-ground effects and for growing as individual specimens, suitable for lawn and other planting effects; for grouping in the border and along the edge of shrubbery. One can produce wonderful effects for screening and in sub-tropical plantings, as they are more vigorous than the type. For planting near streams, ponds and lakes they produce wonderful effects with their large, handsome flowers and foliage.

Their average height is five to eight feet. They are very floriferous and bloom from the beginning of July until late Autumn.

**Red, Pink and White, 3 year old plants**
**Each $1.00 $10.00 per doz. $50.00 per 100**
**Red, Pink and White, 2 year old plants**
**Each 75c. $7.50 per doz. $35.00 per 100**

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**World's Choicest Nursery and Greenhouse Products**

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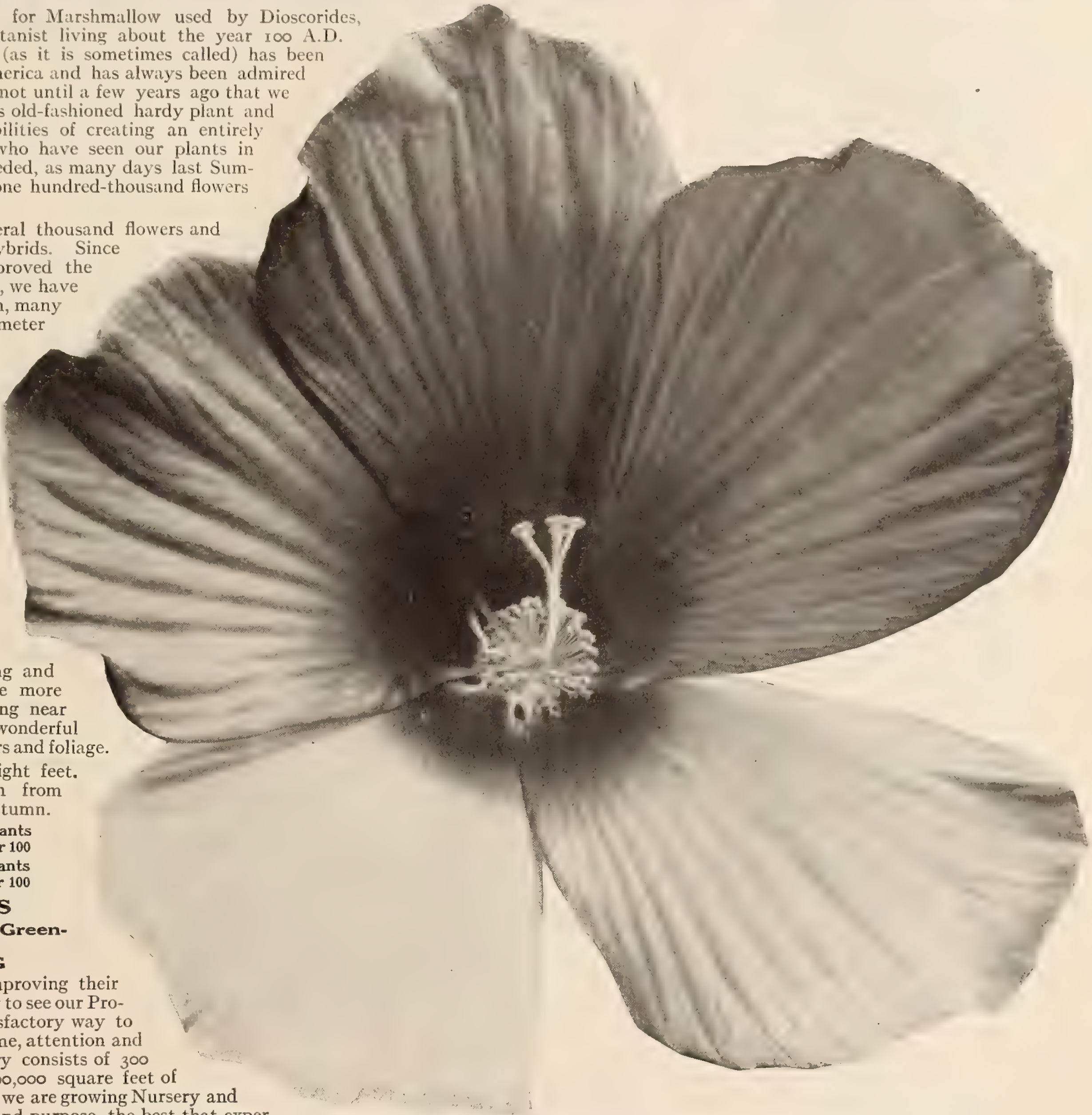
We invite everybody interested in improving their lawns and gardens to visit our Nursery to see our Products growing. This is the most satisfactory way to purchase. We shall gladly give our time, attention and any information desired. Our Nursery consists of 300 acres of highly cultivated land, and 500,000 square feet of Greenhouses and storehouses, in which we are growing Nursery and Greenhouse Products for every place and purpose, the best that experience, good cultivation and our excellent facilities can produce, placing us in a position to fill orders of any size.



**A flower of our New Hybrid Marshmallow, about ½ the size**

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**RHODODENDRONS.** Many thousands of acclimated plants in Hardy English and American varieties are growing in our Nursery.

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**OUR PRODUCTS** give permanent satisfaction because they possess the highest qualities created by our excellent standard of cultivation.
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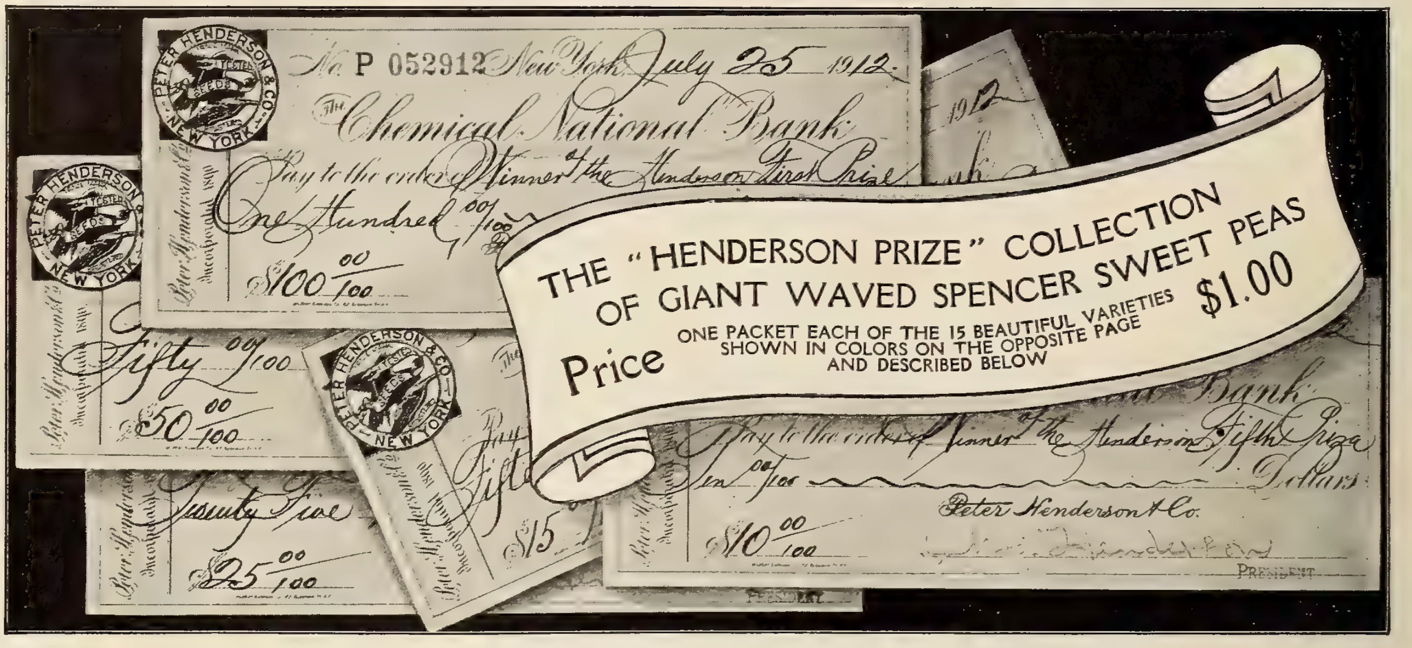
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OF GIANT WAVED SPENCER SWEET PEAS
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## WE OFFER $200.00 IN FIVE PRIZES

To Amateur and Private Gardener Exhibitors at the American Sweet Pea Society's Exhibition

To be held in Boston, Mass., July 13th and 14th, 1912

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THE 15 VARIETIES—12 SPIKES EACH—OWN FOLIAGE—GROWN FROM OUR SEED

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The Society's Rules to Govern and their Judges to Decide. Detailed Information: How to Pack and Forward, Label Cards, Etc. Will be furnished All Intending Exhibitors Who Will Write Us by June 1st, 1912

## The "Henderson Prize" Collection of 15 Giant Spencer Sweet Peas

**Sweet Peas,** gay and fragrant, are perhaps the most universally popular flowers cultivated. Inexpensive, easily and quickly grown from seed, thriving in town or country gardens, supplying an abundance of continuous bloom for months—an adornment to garden, house or corsage. Is it any wonder that they are everybody's flowers, and have been for years and years, even though for a century and a half their tardiness in developing improved varieties—without parallel among cultivated flowers was marvelled at by botanists? Eventually, however, the physiological reason was understood, and artificial cross fertilization was undertaken, then Sweet Pea "blood was broken." New colors and forms began to appear in rapid succession, until finally, about 10 years ago, a climaxing type appeared in the famous gardens of Earl Spencer, Northamptonshire, England. This newcomer, extremely beautiful, the fairest-formed and largest Sweet Pea ever grown, was named "Countess Spencer" and from this has sprung the glorified modern race of **Giant Waved "Spencer" Sweet Pea.**

The characteristics of the Spencer Sweet Peas, grown under congenial conditions are: robust growth, the plants attaining a height of from 6 to 10 feet, requiring for full development to be not less than 6 inches apart. The flowers are giants among Sweet Peas, measuring 2 to 2½ inches across. They are beautifully formed with huge standards, open and upright and immense wings gracefully poised. Both standards and wings are daintily waved, the undulations reflecting high lights and casting shadows in the depths, thus showing a varied harmony of tones which greatly enhances the coloring. Three and often four of these queenly blossoms are borne on long, strong stems, rendering them unsurpassable as cut flowers for vases, bouquets and other decorations. Their long-continued profusion of bloom is phenomenal, but accounted for by the fact that a majority of the flowers of true Spencers fall as they fade—before the seed pod is formed—thus continuing the succession of bloom—for as all know when Sweet Peas set pods, the flowering diminishes.

### Henderson's Great and Grand Sweet Pea
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This glorious crimson-scarlet self we believe surpasses all the World's Sweet Peas of similar coloring in size of flower, form, substance and in brilliant purity, untarnished by burn or scald, though grown unshaded under most trying sun. The flowers of gigantic size are true Spencers . . . . . . . . . . *Pkt.* 10c.; Oz. 25c.

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| **Countess Spencer.** | Soft pink, rose-pink edges | " | 10c.; | " | 25c. |
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### Henderson's Great and Grand Sweet Pea
## MARTHA WASHINGTON

A radiantly beautiful Spencer Sweet Pea, most daintily colored pearl-white from throat to center, then appears a veiled flush of pink deepening in intensity as it merges into the marginal zone of soft tyrian-rose. The standard and wings are adorned alike, front and back being tinted and colored just the same, a remarkable and pleasing characteristic; thus the flowers present the same exquisite color effect whichever way they face, in vase, bouquet or on the plant . . . . . . . . . . *Pkt.* 10c.; Oz. 25c.

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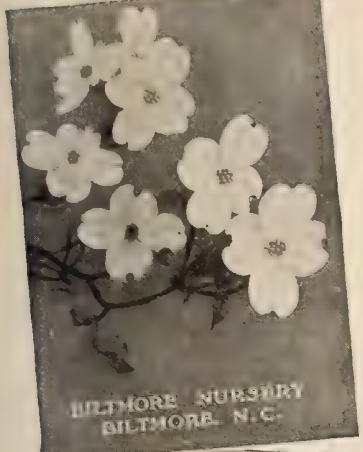

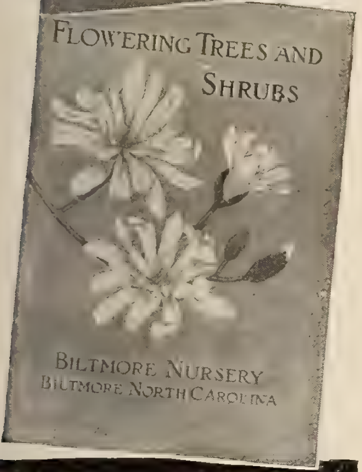

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HARDY GARDEN FLOWERS
BILTMORE NURSERY
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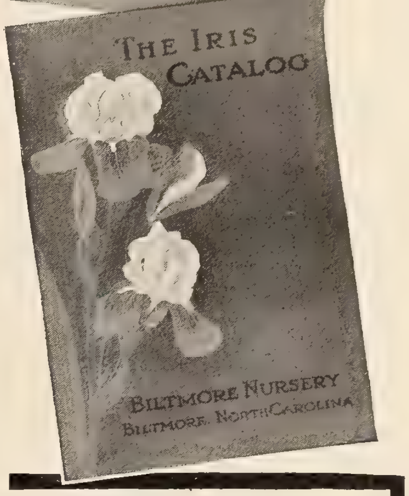
NORTH CAROLINA



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**Biltmore Nursery Catalog** A guide to the cultivated plants of North America. Over two years in the making, and cost more than $1 a copy to complete. Contains 196 large pages and describes more than 300 perennials, 500 flowering shrubs, 325 distinct evergreens, 300 deciduous trees, and 200 odd vines and plants. Freely illustrated.

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**BILTMORE NURSERY, Box 1232, Biltmore, North Carolina**

Improved Double White Killarney (1912)

# Ever Fair Killarney

Every rose lover knows what a magnificent all 'round garden rose Killarney is, with its vigorous growth and splendid blooms the season through. Last year we sent out the Improved Killarney — a sport with double the petalage of the original Pink Killarney. That rose has created a great sensation, all the commercial growers having gone into it. This year we offer an **Improved White Killarney,** also a sport, with **double the petalage** of the original White Killarney. Usually such roses as these are offered only to the commercial cut flower growers the first year — others not getting them until the second or third year.

## Our New Departure

gives the amateur a chance to get these **the first year.** We will send strong healthy plants of the **Improved Double White Killarney** post paid at **75c each, two for $1.00.** We can also furnish at same prices, two other new (1912) varieties namely:—**Killarney Queen,** similar to the original Pink Killarney but three shades darker, and **Sunburst,** a wonderful new yellow hybrid tea, ranking with Killarney and American Beauty in size and grandeur.

For **50c each, three for $1.00,** we can furnish the sensational new rose of 1911 — **Double Pink Killarney,** with double the petalage of the original Pink Killarney, and the following four great commercial cut flower roses of recent introduction, at same prices; **Mrs. Aaron Ward,** Indian yellow, very free, a wonder in its class. **Irish Melody,** the new Dickson yellow, Killarney blood, a splendid variety. **Mrs. Taft,** (Prince de Bulgarie, Antoine Rivoire), a beautiful shell pink, one of the loveliest roses imaginable. **Lady Hillingdon,** clear yellow deepening towards the center. The sensation of the metropolitan cut flower markets the past few months.

If you wish to obtain the

## Ultima Thule in Roses

(the furthest point yet) this year, you must have all of the foregoing in your garden. We will send you fine healthy young plants which will give you good satisfaction. As stocks are limited, orders should be placed at once. Same will be filled strictly in rotation, according to date of receipt. Orders reaching us too late, money promptly refunded.

**S. S. PENNOCK-MEEHAN CO.** Leading Wholesale Distributors of Cut Flowers in America **1614 Ludlow Street PHILADELPHIA, Pa.**

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If your Fruit Trees last Summer looked as though there was something the matter with them:

If the crop was small, ill-shaped, not juicy, shriveled up, and fell off:

Insects and Fungous Diseases are seriously attacking them, and

The only way to **Save the Trees,** have **Large Crops, Perfect Fruit** and **Luxuriant Foliage** is to spray with pure, effective, safe Insecticides and Fungicides.

**BLANCHARD'S "LION BRAND"**

are the standard Sprays of the world—a Spray for every garden, orchard and lawn purpose.

We publish a Booklet giving full information about Fruit and Shade Trees, their diseases and spraying, that we will be pleased to send to you without expense if you write for it.

**THE JAMES A. BLANCHARD COMPANY**
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Factories—New York and St. Joseph

# Sow Your Grass Seed with The Velvetlawn Seeder

PUTS the seed in the ground—not on top. None blown away or eaten by birds. Makes a beautiful, uniform lawn certain in the shortest time. Saves enough seed to pay for itself. Run easily by one person. No matter how small your lawn you can afford to have this seeder.

**Let us send you letters from users, prices, illustrations, etc. We analyze soil and advise our customers free as to the best seed and fertilizer. Write today.**

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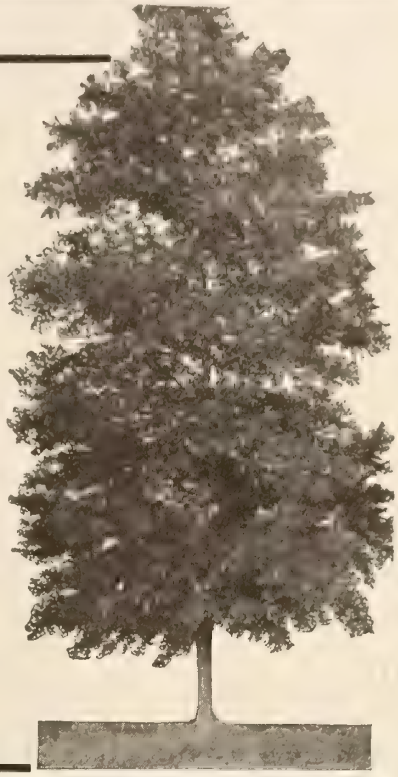

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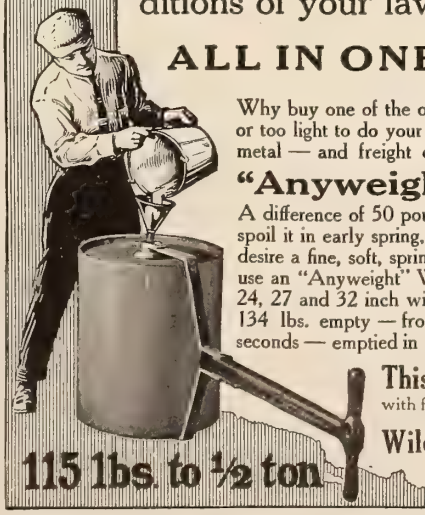

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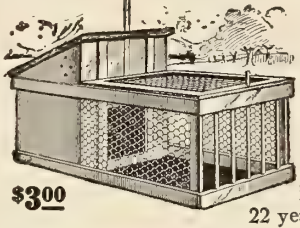

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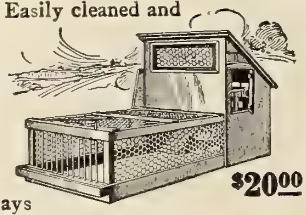

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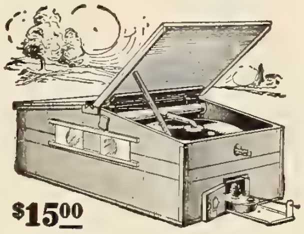

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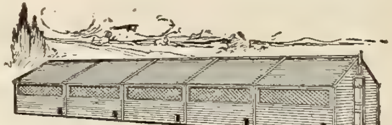

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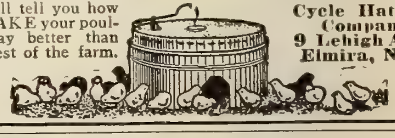

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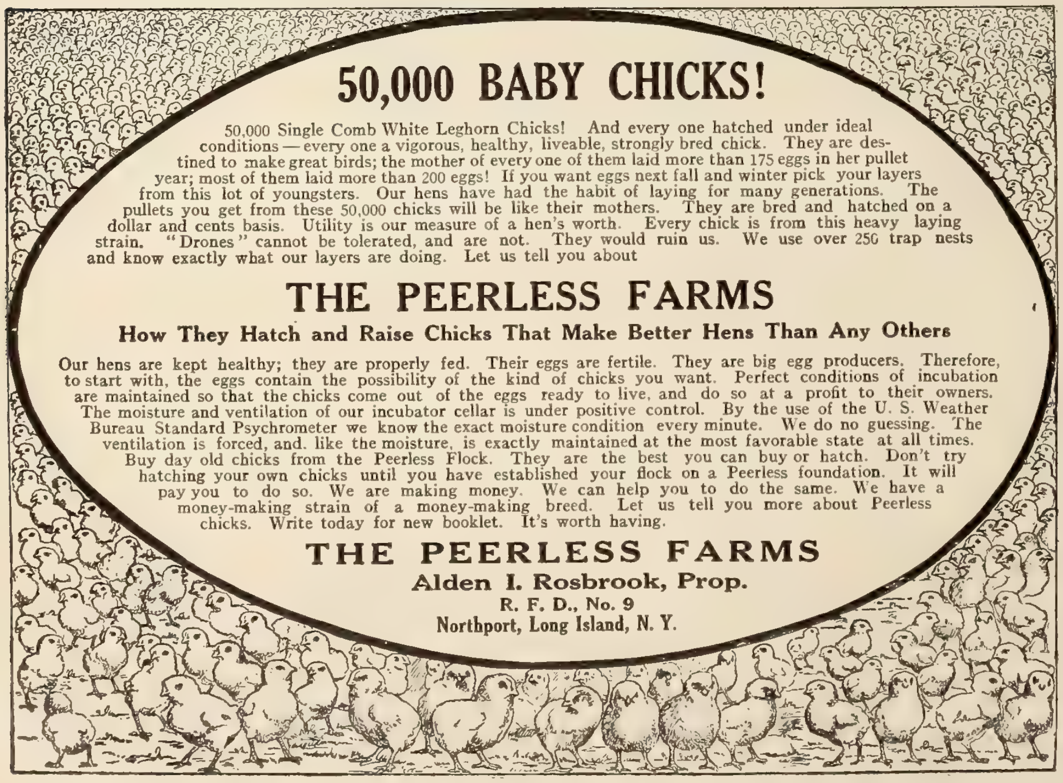

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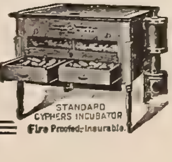

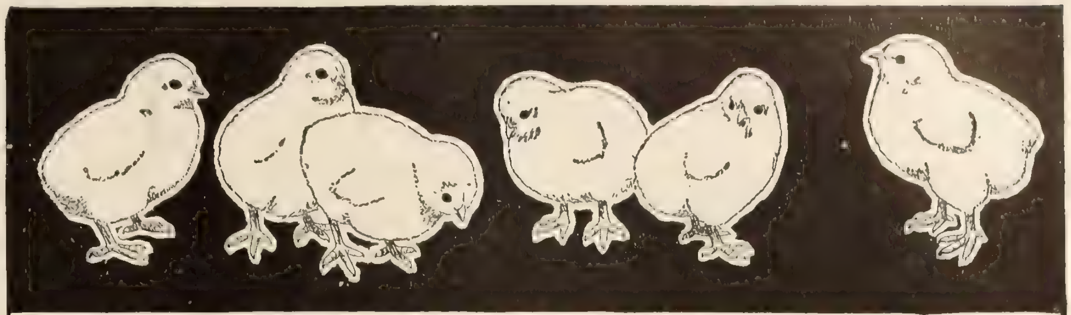

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**TESTIMONIALS**

New Bedford, Mass., Dec. 13, 1911.
Mr. E. R. Philo, Elmira, N. Y.

Dear Sir:—I am very glad to inform you that my White Orpington chicks are all alive and smart. They are just six weeks old and weigh $1\frac{1}{4}$ pounds. I have them in an Economy Coop and they are growing and developing finely.

M. Goulart.

Scranton, Kansas, Nov. 1, 1911.
Mr. E. R. Philo, Elmira, N. Y.

Dear Sir:—Yours of October 26th on hand and beg to say that I have raised all of the White Orpingtons so far. Their average weight is $2\frac{3}{4}$ pounds each and not quite three months old yet. Being a beginner it was quite interesting to watch their development.

Walter Burkhardt.

Marathon, Fla., Dec. 5, 1911.
E. R. Philo, Elmira, N. Y.

Dear Sir:—The little one day old chicks I bought of you are thriving, and all who see them remark about their thrifty, healthy appearance.

I do not expect to lose one of them from weakness or sickness. I refused $20 for them last week.

E. J. Devore.

Paeonian Springs, Va., Nov. 23, 1911.
E. R. Philo, Elmira, N. Y.

Dear Sir:—Your letter of the 20th received, and in reply can give an excellent report. I have had splendid success, have five out of six. Out of the six you sent there were four pullets and two cockerels. My White Orpingtons are a credit to you as well as myself, and they have been raised almost entirely by the Philo System. If at any time I need any poultry supplies you will hear from me.

Mrs. J. G. Jacobs.

Augusta, Ga., Nov. 3, 1911
E. R. Philo, Elmira, N. Y.

Dear Sir:—The six baby chickens I bought from you arrived all O. K. They were, however, delayed about twelve hours in reaching me, but they were bright and active. I received them at night and the next morning they were hungry as wolves, and I made them the custard you suggested. I am greatly pleased with them and expect to make good later on. They are the most active chicks I ever saw.

Dr. W. S. Wilkinson.

## Philo National Poultry Institute

**2294 Lake Street, Elmira, N. Y.**

## Modern Gladiolus

The best sorts at lowest prices. Tenth year in Gladioli exclusively. No common or poor sorts offered. First premium at State Fair. For 30c. I will send 25 flowering size bulbs, with full instructions and list of named sorts.

**Box B. Geo. S. Woodruff, Independence, Iowa**

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ERNEST KELLERSTRASS
KANSAS CITY MO.

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First Prize Winner at New York, Chicago, St. Louis, Kansas City and Jamestown Exposition

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Are the GRANDEST UTILITY birds on record today, and as to their FANCY QUALITY they won first at Madison Square Garden, New York, 1905, 1906, 1907, 1908, 1909, 1910; also at Crystal Palace, London, England, and Chicago and Boston. If you need some birds to IMPROVE YOUR STOCK or for the SHOW ROOM write us. We have them, and the KIND THAT WINS, as our past record shows. STOCK and EGGS for sale at all times. Remember, we are the ORIGINATORS of "CRYSTAL" White Orpingtons, and breed only the one kind. We devote our whole time to this one breed.

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Originator of Crystal White Orpingtons

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Gives information regarding Poultry

THE READERS' SERVICE
Gives information regarding Live Stock

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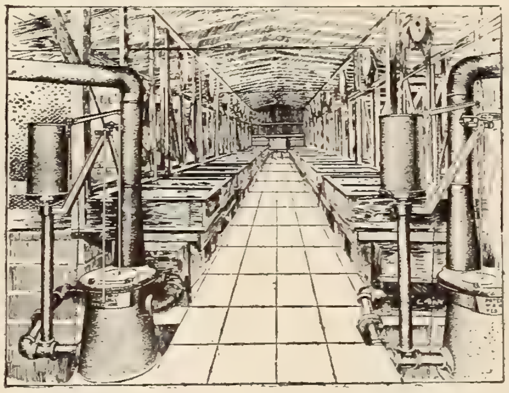
ORIGINAL HOT WATER
**Mammoth Incubator and Brooder**

THERE IS SECURITY IN HALL EQUIPMENTS

In another month the hatching and brooding season will be here. ***Are you prepared for it?*** If not, there is time to fill your order for a HALL INCUBATOR having a capacity from 1,800 to 20,000 eggs. Winter brings delayed transportation and bad roads. Immediate shipment will avoid delay, disappointment, loss of time and money. You can get out your early chicks for Fall layers and sell "day olds" to many customers. A great money maker, isn't it?

***Place your order NOW*** ***We will ship PROMPTLY***



Hall Hot Water Brooder System

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Experiments prove that the fumes of burning oil in a brooder house reduce the vitality of the chicks 50%. This means sickness, diarrhea or death of a very large percentage of your chicks. With the Hall System the air of the brooder house is kept pure and wholesome. The HALL System of heating and ventilation supplies pure, warm air just where the chicks want it—***on their backs***. No crowding, just normal development under conditions which produce maximum results in strong, hardy, active and livable stock.

The Hall Brooder Systems are made both double and single. The above cut shows a double system: i. e., one single system placed on each side of a central alley; also how the systems are constructed.

Observe that the hovers are placed in the alley so that feeding, watering, etc., is done without entering the pens. This saves time, labor and cost. By raising two slides the pens and hovers (in ten minutes) can be cleaned and new litter put in. More than 50 per cent. of time and labor is saved.

The Hall chick-saving brooders are run by the Hall Self Regulating Furnaces—powerful, low-priced hot-water heaters, burning anthracite coal.

These statements are verified by years of actual experience in use by enthusiastic customers.

The lives of your chicks year after year depend upon correct brooding; this the Hall System gives.

**THE HALL MAMMOTH INCUBATOR COMPANY, Little Falls, N. Y.**

## Jersey Reds are Lively Growers

and lively growing pigs are quick money-makers. Jersey Reds are the most satisfactory, all-around breed. Those who have tried them say so. Fatten easily and quickly, are small-boned, long bodied, vigorous and prolific; quality of meat unsurpassed. Have some choice offerings now. Satisfaction guaranteed Write quickly. Free Catalog. **Arthur J. Collins, Box T, Moorestown, N. J.**

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Regular Fall Offering of pigs 8 to 10 weeks old; may be selected in pairs or trios no akin. We have the largest herd of these animals in the U. S. Every animal sold registered at our expense and guaranteed to be satisfactory to purchaser.

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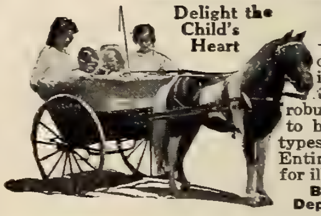
and the only reliable guardian for the home. Stock of all ages for discriminating buyers. *If we can't please you nobody can.*



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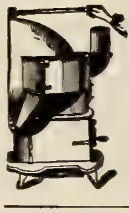

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till you have read the Six Free Chapters written by Robert Essex after a Quarter Century's Experience in the business. They tell *How to Make Money With Poultry; How to Build Low-Cost Poultry Houses.* They tell Fanciers and Women, and Farmers how to *START RIGHT*, and also tell all about America's Largest Line of Incubators and Brooders. The book is FREE. Write today. Address,

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*"Everything in the bird line from a Canary to an Ostrich"*

I am the oldest established and largest exclusive dealer in land and water birds in America and have on hand the most extensive stock in the United States.

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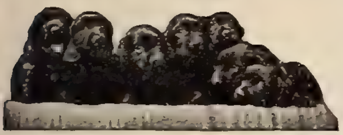

A number of thoroughbred black and chocolate color dogs, 10 months old. Sired by Ch. Lucky. Photo. and pedigree on request. Your money back if not pleased.

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My book has helped people make fortunes in the poultry business—will do the same for you. Low prices for stock. Eggs for Hatching, Incubators and Brooders. 200 pagas containing over 100 illustrations—many in natural colors—gives list of 72 varieties of Pure Bred Fowl—gives complete information about eggs, stock, incubators, etc. This book is a marvel and only 15c. Send today read it through and if you don't feel fully satisfied that it is worth many times that much, return the book and get your money back. Price list free.

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## Crystal White Orpingtons

**KELLERSTRASS STRAIN**

The **Ideal Fowl** for City or Country. The Secret of Winter Eggs? White Orpingtons! Cockerels, Pullets, Trios, Pens from prize winning stock. Large white massive birds. Write me your wants. Stock shipped on approval. Eggs $5.00 per 15.

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# "The CORNING EGG FARM BOOK By CORNING HIMSELF"

### The Story of an Accomplished Success. A Real Book, Not a Paper Covered Pamphlet

Every Owner of Hens, Just Half a Dozen or a Big Flock, Needs This Great, New Corning Book. It means an Increase in Eggs, Chicks, and Money that Will Astonish You.

**The Book Reads Like a Novel, and Gives Information to the Layman Which is Simply Invaluable**

## The Greatest Poultry Book Ever Written of the Greatest Egg Farm Ever Known

The Strain That Makes The Corning Egg Farm Famous

**In this New Book the Cornings tell you how to get the large, white eggs of delicate, delicious flavor, and more of them than you have ever had before.** We get prices higher than the highest market quotations, and are never able to fill all orders. Last year we received more than three times as many orders for hatching eggs as we were able to fill. Every hen we could spare for breeding was sold in the early Spring for August delivery. This is why we really do make money with our hens.

## $6.41 per Hen per Year Has Now Been Surpassed on The Corning Egg Farm

and this New Book tells you how. Nothing has been done on The Corning Egg Farm that cannot be accomplished by any one of fair, average intelligence and ambition.

**To-day we have on the Farm 6,000 Pullets and Hens; 15,600 Incubator Capacity at a Hatching; 264 feet of Brooder House; 650 feet in length of Laying Houses, and 58 buildings with a floor space of 18,455 square feet, representing a cash investment of $40,000,** nearly every penny of which has been made right on the Farm out of eggs and chickens, during less than six years. This new book tells you exactly how it was done and how you can do it. You need no other guide or instruction to succeed.

One great beauty of the Corning Method is that it is just as suitable and effective with a few hens around the lot as with the largest flocks on big commercial egg farms. Everyone should keep poultry. It's a pleasure and economy. With this New Corning Book as your guide you can make your chickens pay, and ***Pay You Well.***

## Think All You Get in This New Corning Book

**Plans, Measurements and Instruction.** How to Build the Celebrated Corning Houses.—**How the Corning Strain S. C. White Leghorn was Developed,** explained so clearly that you, yourself, can develop a strain of any breed you fancy.—**Incubation and Brooding.—Growing Youngsters on the Range.—Selecting the Breeders.—1,500 Pullets in a Corning Laying House.—Feeding, the Key to Success.** Some World Startling Discoveries in Feeding for Eggs Have Been Made on the Farm. **The Whole Corning Method,** the most complete and biggest money-making plan of running chickens.

With the Corning Method we have made the **highest average egg production,** and you will save the cost of the Book in no time. The Corning Egg Farm Book is the only complete book on egg production worth while, at any price. It simply cannot be properly described in an advertisement—you have to see it, own it, read it to know how interesting and valuable it is.

***Bound in Rich, Blue Cloth, Stamped in Gold, and with Cockerel in Colors, 216 pages, text in clear type. on fine book paper. A magnificent reproduction of an oil painting, in all its glorious colors for the frontispiece. 35 magnificent full page and larger photographs in half-tone. 39 pen and ink drawings, plans of buildings, with dimensions, etc. Price $1.00 postpaid.***

**THE CORNING EGG FARM, BOUND BROOK, N. J.**

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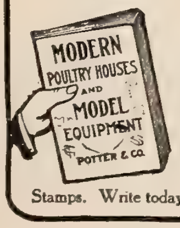
# Before You Build or Buy

*Get Our Big New Catalog—See How Much You Save*



by buying Potter's Portable Factory-made Fresh-air Houses; coops, feed hoppers, fountains, vermin proof roosting and nesting fixtures, etc.—everything for poultry owners, highest grade and cheaper than you can make at home.

**Ten Years' Experience**

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SAVE MONEY ON HOUSES AND FIXTURES
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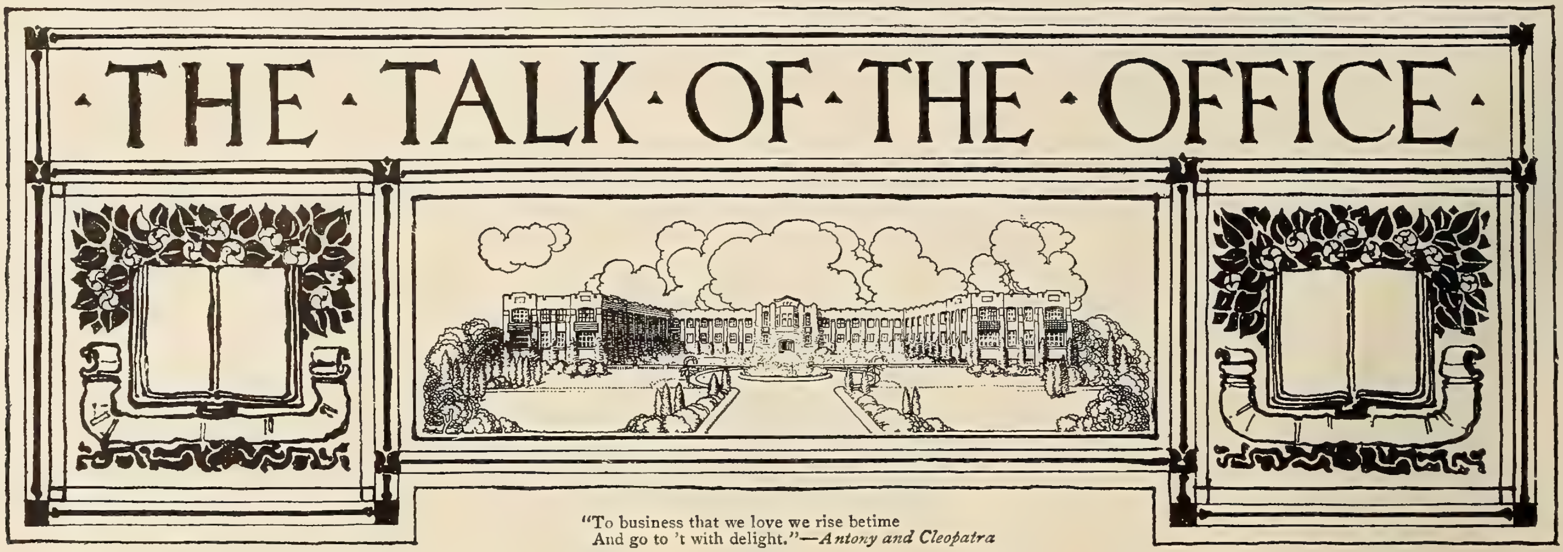
# ·THE·TALK·OF·THE·OFFICE·



"To business that we love we rise betime
And go to 't with delight."—*Antony and Cleopatra*

## SUCCESS OF THE LONG TERM SUBSCRIPTION PLAN

We explained in the December and January issues why we felt that long term subscriptions were profitable to reader and publisher, and the result was that we more than doubled the number received a year ago.

### REAL CO-OPERATION

This plan having proved to be most successful, we want to further extend it. The saving in the expense of circular matter, advertisements, clerk hire, postage, etc., is given to the reader. Long term subscriptions may be used in two ways:

(1) The subscriber may renew his subscription to our magazines on the following terms:

*The Garden Magazine*
1 year $1.50
3 years $3.00
*Country Life in America*
1 year $4.00
2 years $6.00
3 years $8.00 ($8.50 after May 1st)
*The World's Work*
1 year $3.00
2 years $5.00
3 years $6.00

(2) Because it costs us in advertising and circulars so nearly all we get to start a new subscriber, and because we wish to extend the circulation of our magazines to others of the *same class of readers* (in our unprejudiced opinion, the best in the world), a present subscriber may use a long term subscription to renew his own subscription and give one or two subscriptions to friends; or get one or two friends to join him in a long term subscription, thus making a two year subscription into two subscriptions for two persons — one a renewal; or a three years' subscription into three subscriptions to three persons — one a renewal. As we have said, our advantage comes in from the co-operation of our readers to extend the magazine list among others of the same interested class of readers.

### IF THE IDEA APPEALS TO YOU

you need not wait until your subscription expires. If you care to make these presents to friends or get friends to join you, the long term subscriptions may be sent in at any time and your own renewal extended after its present expiration. The address tag on your magazine wrapper tells when your term expires. All such subscriptions must be sent direct to Doubleday, Page & Co., Garden City, N. Y.

### ADVERTISERS' SERVICE

A year or so ago we inaugurated a department for helping our advertisers, or would-be advertisers, in suggesting and originating good copy. This department has done very well, partly because we have a collection of tens of thousands of photographs to draw from, a photo-engraving department to make plates and an experienced suggestion force.

The more we can help our advertisers to make their copy successful, the better for all of us. The service is free absolutely and if you are interested in the subject, send any material you have and let us make some practical copy suggestions.

### THE ALMANACS FOR 1912

There are two, each, we feel, covering its field well and completely. They are:

*The Garden and Farm Almanac* — 4th year and going strong. By mail, 35 cents.

*The Business Almanac* — 1st year. Everything an investor wants to know. Fifty cents postpaid. $1 in cloth.

For several years the *Garden and Farm Almanac* has run out of print. Enough said!

### ABOUT NEW SPRING BOOKS

Here is a list of the books in press for spring publication. The dates are subject to change:

| | | Net |
|---|---|---|
| *February* | | |
| In Search of Arcady | Nina Wilcox Putnam | $1.20 |
| Red Eve | H. Rider Haggard | 1.20 |
| Ben Greet Shakespeare:<br>The Tempest<br>A Midsummer Night's Dream<br>As You Like It<br>The Merchant of Venice | Per vol. cloth<br>leather | .60<br>.90 |
| One Hundred Masterpieces | John La Farge | 5.00 |
| Happy Humanity | Frederik Van Eeden | 1.25 |
| *March* | | |
| Fairy Tales a Child Can Read and Act | Lillian E. Nixon | .75 |
| The Real Fairy Folk | Louise Jamison | 1.00 |
| Counsel for the Defense | Leroy Scott | 1.20 |
| The Foresters' Manual | Ernest Thompson Seton, cloth<br>paper | 1.00<br>.50 |
| Many Celebrities and a Few Others | William H. Rideing | 2.50 |
| The Radium Terrors | Albert Dorrington | 1.20 |
| The Girondin | Hilaire Belloc | 1.25 |
| The Recording Angel | Corra Harris | 1.25 |
| The Spider Book | John Henry Comstock | 4.00 |
| New Demands in Education | James P. Munroe | 1.25 |
| *April* | | |
| Popular Garden Flowers | Walter P. Wright | 2.50 |
| Far Quests | Cale Young Rice | 1.25 |
| The Guests of Hercules | C. N. & A. M. Williamson | 1.35 |
| Saturday in My Garden | F. Hadfield Farthing | 2.50 |
| *May* | | |
| The White Waterfall | James Francis Dwyer | 1.20 |
| Colonial Architecture<br>Series I., Fifty Salem Doorways | Frank Cousins | 5.00 |
| Birds of Eastern North America | Charles K. Reed | 3.00 |
| A Personal Narrative of Political Experience | Robert M. LaFollette | 1.50 |
| The Book of Grasses | Mary Evans Francis | 4.00 |

We have also some plans for new books which have been taken over with the publishing business of Messrs. Baker & Taylor Co., particulars later.

Any of these books will be sent on approval, but better yet, ask to see them at your local bookstore.

### THE LIBRARY OF WORK AND PLAY

The readers of this magazine were recently given an opportunity to secure the attractive book issued by our Sales Department descriptive of the new Library of Work and Play. More than twenty-five thousand of these books have been distributed, and if you have not received a copy, we shall be glad to send one on request.

### COUNTRY LIFE STATION

The following trains from New York stop at our own station on every week day:

| *Leave Pennsylvania Station* | *Leave Flatbush Avenue Brooklyn* | *Arrive at Garden City* |
|---|---|---|
| 7.02 A.M. | 7.04 A.M. | 7.44 A.M. |
| 7.55 A.M. | 7.59 A.M. | 8.35 A.M. |
| 9.32 A.M. | 9.33 A.M. | 10.11 A.M. |
| 11.00 A.M. | 11.00 A.M. | 11.46 A.M. |
| 2.00 P.M. | 1.57 P.M. | 2.45 P.M. |
| 3.04 P.M. | 3.00 P.M. | 3.47 P.M. |
| 3.34 P.M. | 3.38 P.M. | 4.21 P.M. |
| 4.13 P.M. | 4.09 P.M. | 4.57 P.M. |
| 4.44 P.M. | 4.44 P.M. | 5.20 P.M. |

and these trains go from our own station every week day:

| *Leave Garden City* | *Arrive at Flatbush Avenue Brooklyn* | *Arrive at Pennsylvania Station* |
|---|---|---|
| 5.35 A.M. | 6.11 A.M. | 6.14 A.M. |
| 8.18 A.M. | 8.54 A.M. | 8.53 A.M. |
| 8.52 A.M. | 9.29 A.M. | 9.28 A.M. |
| 9.41 A.M. | 10.17 A.M. | 10.20 A.M. |
| 10.32 A.M. | 11.08 A.M. | 11.08 A.M. |
| 1.19 P.M. | 1.51 P.M. | 1.54 P.M. |
| 1.55 P.M. | 2.32 P.M. | 2.36 P.M. |
| 3.20 P.M. | 4.01 P.M. | 4.02 P.M. |
| 5.20 P.M. | 5.58 P.M. | 6.02 P.M. |
| 5.58 P.M. | 6.36 P.M. | 6.39 P.M. |
| 7.14 P.M. | 7.55 P.M. | 7.55 P.M. |

Country Life station is the next beyond Garden City.

Let Moons' put a planting like this about Your House.

Your property ceases to be a house and lot and becomes a home when its boundary lines and bare, angular architecture are blended and graced with foliage and flowers.

Just what Moons' have done for the property illustrated they can do for you because they have such an assortment of varieties that some are sure to be suitable for your property. Besides, they look at the selling of Nursery stock in a way that is different. They have an interest in the successful growth of their trees and, when assistance is sought, a willingness to help in the selection and arrangement of varieties. Thus the purchaser not only receives the material with which to make the planting but the interest and when sought the assistance of a Nursery organization of large and long experience.

**Moons' Hardy Trees and Plants for Every Place and Purpose,** is the title of an abundantly illustrated, comprehensive catalog of which a new edition has just been issued. Send for it.

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## THE WM. H. MOON CO.

**Makefield Terrace**
**MORRISVILLE, PENNSYLVANIA**

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THORBURN'S SEEDS have been renowned for their purity and fertility ever since the days of Washington and Jefferson, over 100 years ago. Year after year, by critical selection and scientific culture, we have improved the strains until today, without question, we list the largest assortment of flower seeds in America, and their quality is unapproached. Get our 1912 catalog. It contains a wealth of information and advice, yet it is free. Users of Thorburn's Seeds are also entitled to the series of helpful booklets issued by us (one each month) giving timely hints about the Garden.

## Thorburn Asters are Favorites

This year the ASTER is the favored flower and it should be. It is of very easy culture and will flower from July to October. Its large Chrysanthemum-like blossoms of all colors of the rainbow make it the queen of cut flowers. The dwarf varieties are splendidly adapted for borders along walks or around beds.

**For 10c.** We will mail you a packet of the seed of our famous German Quilled Aster, Mixed, and a packet of assorted seeds of all kinds of Asters, making a beautiful variety in all shades and colors.

**For 25c.** We will mail a packet each of the graceful and feathery Branching Aster, rose-color; the beautiful and early Queen of the Market Aster, Mixed, and of the pure white Snowball Aster—All Beauties.

**For 50c.** We will send three packets of the Branching Aster, one packet each, white, rose, and dark blue; also a packet of the splendid rose-colored Victoria Aster, and two of the large flowered, Dwarf, Comet Aster.

**For $1.** We will send a dozen packets of the leading Thorburn Asters, Victoria Dwarf White, Queen of the Market, white, crimson, and light blue; the Hohenzollern, Rose; the Comet Giant, Mixed; the Branching Aster, crimson, dark blue, rose, pink and white; and the Ostrich Plume Aster, Mixed.

**(Aster Seed is scarce this year, so place your order early.)**

And remember the Thorburn catalog, the best seed book of the year, is free. Write for it today.

*Thorburn's Seeds*

*(110 years in business in New York)*

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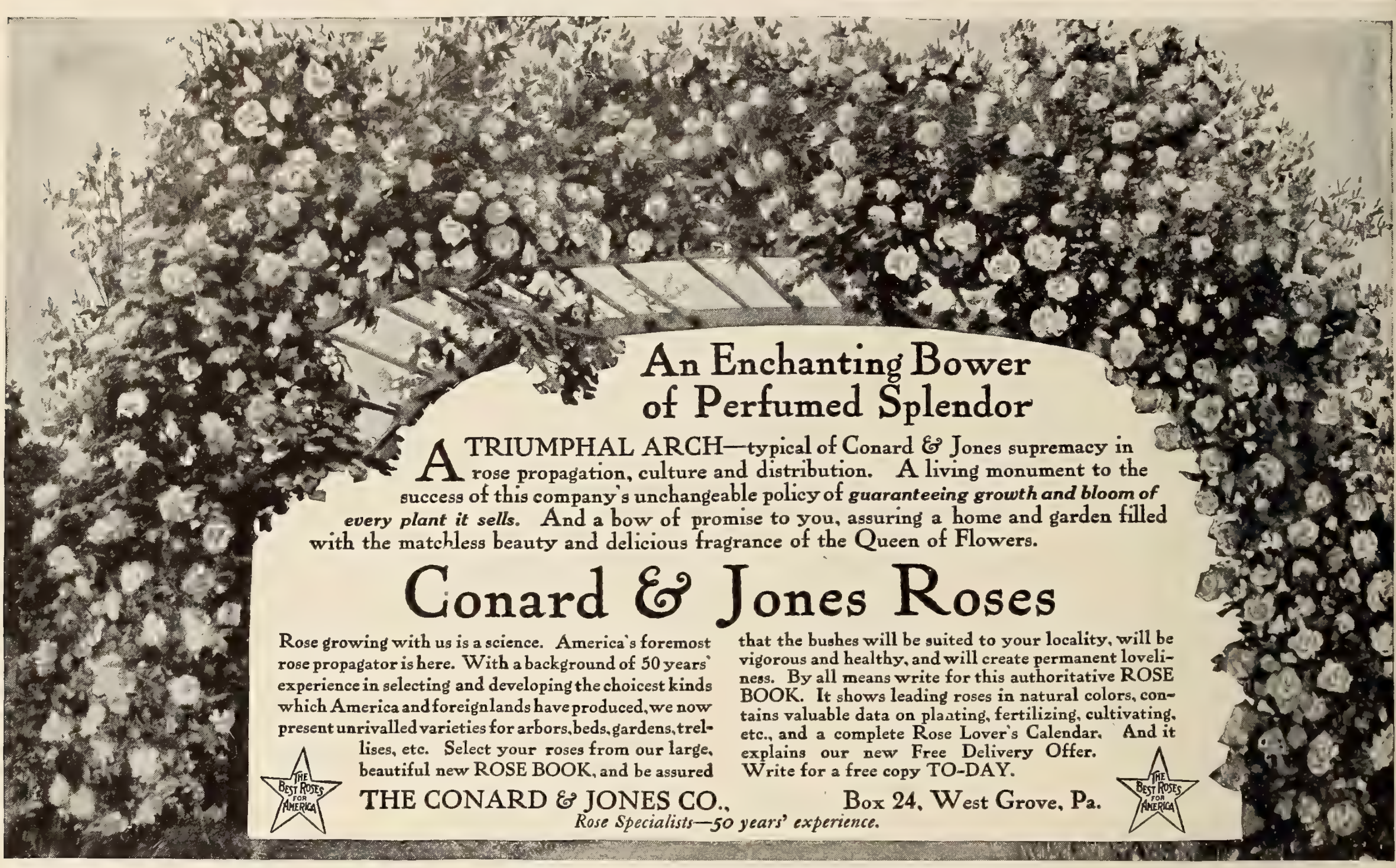

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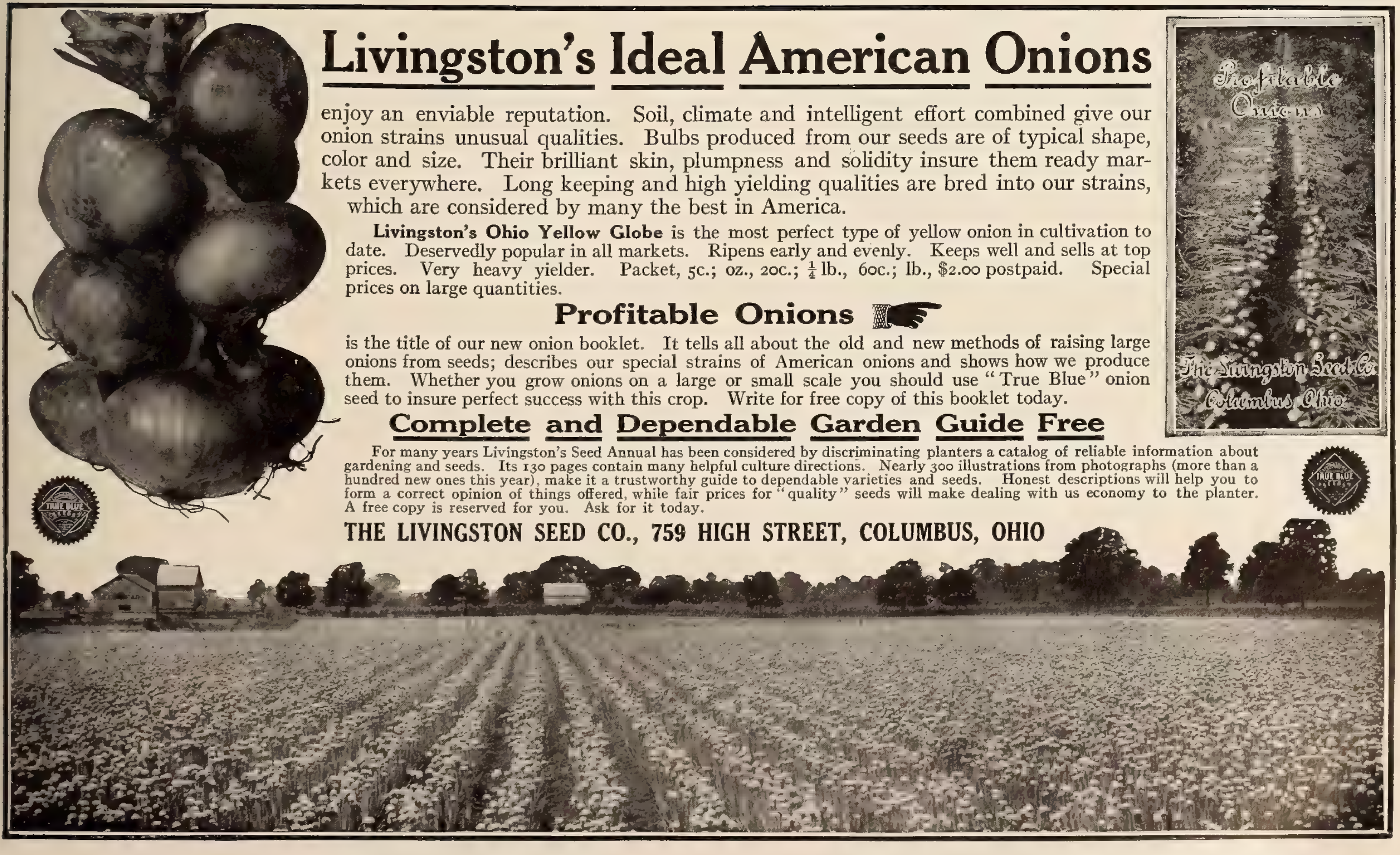

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# The Garden Magazine

VOL. XV—NO. 2
PUBLISHED MONTHLY

MARCH, 1912

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FIFTEEN CENTS A COPY

The MONTH'S
REMINDER

[For the purpose of reckoning dates, New York is generally taken as a standard. Allow six days' difference for every hundred miles of latitude.]

## March Manœuvres

THE amount of garden work you do in March depends upon, first, the kind of season; and second, the thoroughness with which you did the February tasks. This is the worst month of all for the piling up of work. Get every job behind you as quickly as possible. If conditions—weather included—are of the best, these are some of the wise gardener's most important March duties:

*Finish spreading manure;* plow or dig up the soil to the depth of at least a foot. Repeat this spading, leveling and raking as often as possible until the ground is needed.

Now is the time to improve poor soils; add sand or fine cinders to heavy ones, lime or wood ashes to sour ones, muck or clay to sandy ones and well-decayed manure, in generous doses, to *all* soils. Manure and thorough working are the foundations of a successful garden.

*Plant* fruits, trees, bushes, vines and yearling plants, but *only* after the heavy freezes have left the ground for the season. Cut these back well and prune to clean, unbroken roots before setting.

*Prune,* the brambles, fruit-trees and summer-blooming ornamental shrubs and vines before the buds are ready to break.

*Do not* prune forsythia, syringa, lilac, and all spring bloomers or you will have no blossoms this season.

## About the End of the Month

*PLANT asparagus and rhubarb.* Make trenches or hills two to four feet deep, half fill them with almost clear manure adding soil gradually toward the top. Start a few old plants toward early ripening by placing boxes or barrels over them, and banking manure around these.

Remove the mulch from the rest of the old beds and dig them over shallowly with a spading fork.

*Sow outdoors,* using judgment: potatoes, lettuce, radishes, peas, onions, spinach, etc. Of course you may have some plants nipped but the chances are equally good for a successful, extra early crop.

*Sow in hotbeds:* lettuce, cabbage, Brussels sprouts, cauliflower, squash, melons, cucumbers, tomatoes, peppers, and eggplant. The last three need extra heat; keep them together in a bed where the temperature can be kept high.

As these and earlier plantings grow and become crowded "prick them out" to other beds or frames, spacing them four inches apart. Look out for the "damping off" disease caused by lack of ventilation excessive moisture and too high temperature. In other words keep the sashes raised as much and as continuously as possible, without ever chilling the plants.

*Transplant seedlings* on a warm, bright day, but protect them from sunlight. The slogan of transplanting is "Don't let the roots get dry." Cut back to half the leaf surface of very large plants when transplanting.

Don't forget how easily seedlings can be handled in paper pots, old berry baskets and tin cans, and start some therein. Make a note of saving such things for next year's use.

## The Keynote of All Planting

THE gardener who makes two plants grow where one grew before, defeats his own aims unless the two are of better quality than the one. Never be satisfied till your crops are of the best. The first essential to this end is—good seed. There is no excuse for using anything else; it is not even economy. Buy of the well-known, reliable seed firms; choose selected, proven varieties, and don't begrudge the price you have to pay for them. Look at this side of it: a cucumber vine from one seed may bear twenty-five fruits worth five cents each, a package of perhaps fifty such seeds costs ten cents or so. Aren't you getting your money's worth? Most seeds involve much more expense than cucumbers. Most of the cauliflower seed comes from Holland, the best carrot, celery and radish seed from France, nearly all the sweet pea seed from California, and so on. There is a tremendous difference between well-grown and poorly grown seed, and the results therefrom. Don't be "penny wise and pound foolish," buy *the best.*

## In the Flower Garden

HERE the activities are much the same as among the vegetables. Sweet-peas, iris, pansies and other very hardy sorts can be planted outdoors, but you need not rush them yet. Others may be started in flats or pots in hotbeds or indoors. All annual vines deserve, and ornamental grasses require, this sort of treatment.

A number of perennials will flower this summer if sown now. For instance: *Campanula Carpatica, Centurea montana, Dianthus plumarius, Erigeron glabellus, Papaver nudicaule,* and *Penstemon campanulatus.*

Remove the coarse mulch from hardy perennial borders, around shrubs, etc. Dig in the finer residue as a top dressing.

## The Garden Record

THE really useful garden notebook is a permanent affair that can be referred to every year. A system that is only slightly better than nothing at all is that of marking on a wooden label at the end of each row, the variety and the date of sowing.

The best plan is to first plan the garden on paper and then to have a sort of "day book" ruled off to contain the following facts for each sowing: kind of vegetable, variety, dates of sowing, transplanting, maturing and harvesting, space given to, yield, length of bearing season and general success. If you get your seed from various sources note this, and if you can be at hand constantly have columns for dates of sprouting, blossoming, spraying, etc. Daily climatic records are also interesting and often very useful.

At the end of a month or a season copy all data into a well bound ledger. Here is a chance to figure out the actual cash value of the garden and to discover ways to reduce expenses and increase returns.

## Note the Last Chance to

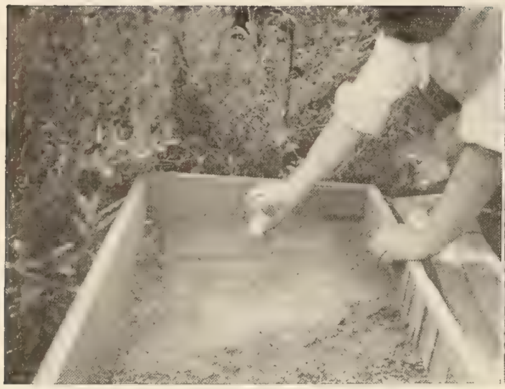
PRUNE dormant plants.

Spray with lime-sulphur for San Jose scale.

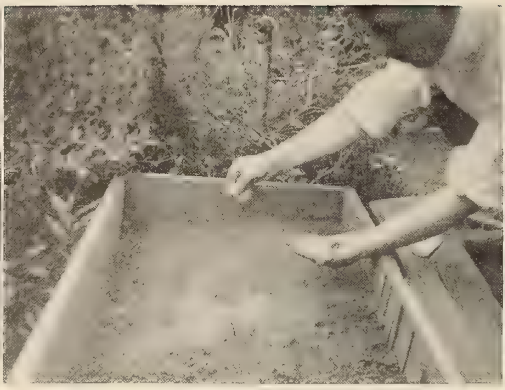
Discover and destroy brown-tail and gypsy moth nests.

Change the plan of your garden.

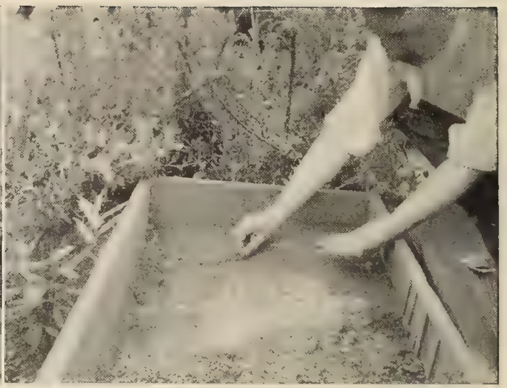
Divide established clumps of hardy perennials—golden glow, phlox, larkspur, rudbeckia—and other hardy perennials in the same way that you handle old rhubarb plants.



The professional gardener sows seeds through the torn corner of the envelope to get even distribution



An easy way for the amateur is to place them in the palm of one hand, scattering with the other



Very large seeds may be sown in a row one by one and about two inches apart, to save thinning

# The Trick of Sowing Flower Seeds—By H. S. Adams Connecticut

MAKING LIGHT WORK OF THE JOB — THE RIGHT WAY TO HANDLE SEEDS OF DIFFERENT SIZES FOR GROWING WHERE THEY ARE SOWN OR FOR TRANSPLANTING LATER

PERHAPS more often than not, grandmother's way of planting seeds is followed in this day and generation. Her way was to plant the seeds, in rows or circular patches, wherever her garden offered the space, the spot being marked by the seed envelope impaled on a stick, or strip of shingle. If the chickens were likely to be running around loose, there was a little protective fence of twigs.

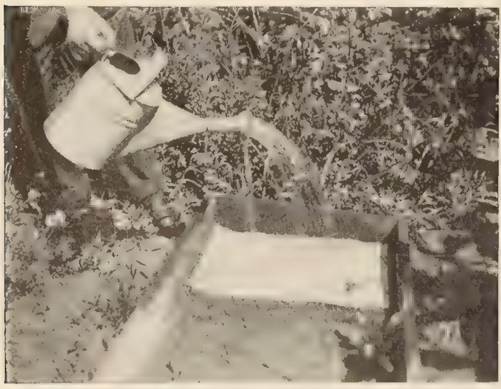
With all due respect to grandmother, this is not a very good way. No doubt she, in her time, guarded against failure — as she did in so many other concerns of her well-ordered life — by "an infinite capacity for taking pains"; but in this day and generation the fewer flower seeds planted in that fashion the better. Barring the rare annuals, like poppies, that can not be transplanted and certain very large seeds, such as the four o'clock, it is wiser not to fly in the face of Providence. The soil may bake in the sun or the seeds wash out in the rain, and while you can always fall back on the time-honored complaint that the seed was "no good," the chances are very slight that you will be right.

Not only because both of these adverse conditions can be met successfully and the seed cared for more conveniently, but because a good start of the season is made, a coldframe, or even a shallow box in a sunny home window, is preferable. Being, of necessity, a somewhat intermittent gardener, my choice of the two is the coldframe; it needs much less watching in the matter of the soil baking. Far from being at all particular as to the style of coldframe, I temporize with whatever is handy, pending the day when I shall have a line of the real thing. I used to get along with four old boards, laid on edge and pegged, and a window sash or two to complete the outfit. Now I have gone a peg nearer to professional respect by taking a shallow 3 x 6 packing box, made of inch wood; knocking out the bottom and sinking it a little way in the ground. It takes two sash and answers all ordinary requirements.

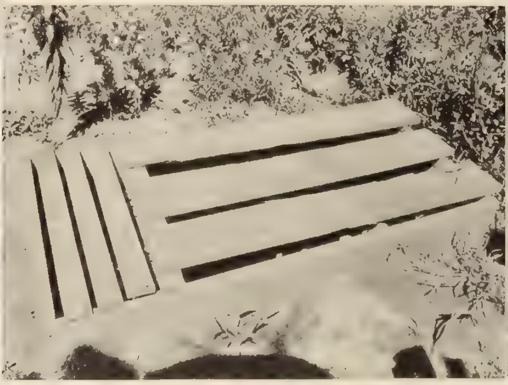
If there is any question of the drainage being good, a thin layer of ashes is a proper foundation for such a seed bed. The filling, to within about three inches of the top of the frame, should be good, rich soil loosened, if need be, by the addition of a little sand. Sift in the filling, to avoid lumpy soil; reduce the surface to a rough level and then pack firmly. I use an old soap-stone, 6 x 9 inches, for a packer; but a piece of smooth board, about the same size, and fitted with a wooden handle for the hand to grasp when pressing, is better.

When the soil thus is made firm, the actual sowing is done according to the size of the seed. The finest seed may be scattered broadcast after the manner of the professional head gardener, who tears off a corner of the envelope and lets the tiny grains fall gently and evenly through the opening. My own way is to pour the contents of the envelope — or as much of it as I think I shall need — into the palm of the left hand and, with the thumb and two fingers of the right, take a pinch of seed and scatter it. In the latter case, of course, both hands must be quite dry; otherwise the seed will stick to them. Usually I sift a little fine soil on top and press once more; but some prefer to leave the seed on the surface, as nature does.

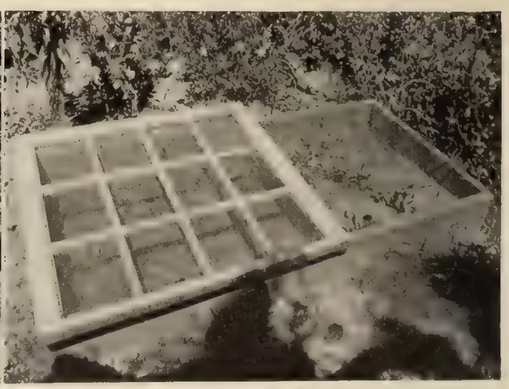
In the case of the general run of seed I make shallow rows the narrow way of the coldframe, sometimes the merest scratch, and sprinkle the seed in either one of the two ways mentioned. Then I sift a little soil on top and press down. Very large seeds, such as the morning glory and nasturtium, I find it easier to place in the



Baking and washing of soil are most easily regulated by watering through a piece of white cotton cloth



Two ways of shading a seed bed in summer: boards for heavy, and slats for light, protection



An improvised coldframe. A shallow box, with the bottom knocked out, is sunk in the ground diminutive trench one by one, about two inches apart in the row — this to avoid thinning out. Have wooden labels ready and stick in the ground, close to the side of the frame, as fast as each kind of seed is planted.

The question of drying out and washing out I have reduced to a very simple one by the expedient of cutting a piece of white cotton cloth the precise size of the seed bed. When the seed is all sown, I lay this cloth on the bed and wet it well with a watering can. The cloth keeps the ground moist and the soil is not washed at all by the sprinkling. Until the seeds begin to come through the ground all the watering is done through the cloth, which later may be used to lay on top of the sash for shade.

Unless a great number of plants are needed, thinning may be done in the coldframe; a certain amount must usually be done there in any case. If a considerable stock is required, it is better to have a second frame ready for transplanting.

If the weather turns warm, or in the case of summer planted seeds, the sash may be replaced by narrow slats, which keep the soil from baking rapidly and at the same time permit the necessary air circulation.

# The Whole Art of Raising Seedlings

## — By Parker Thayer Barnes, Pennsylvania

HOW TO HAVE A BIGGER AND BETTER GARDEN AT A LESSENED EXPENSE. ANNUALS, PERENNIALS AND SHRUBS COMMONLY BOUGHT FROM PLANTSMEN OR NURSERYMEN THAT CAN BE EASILY RAISED AT HOME IN LARGE QUANTITIES

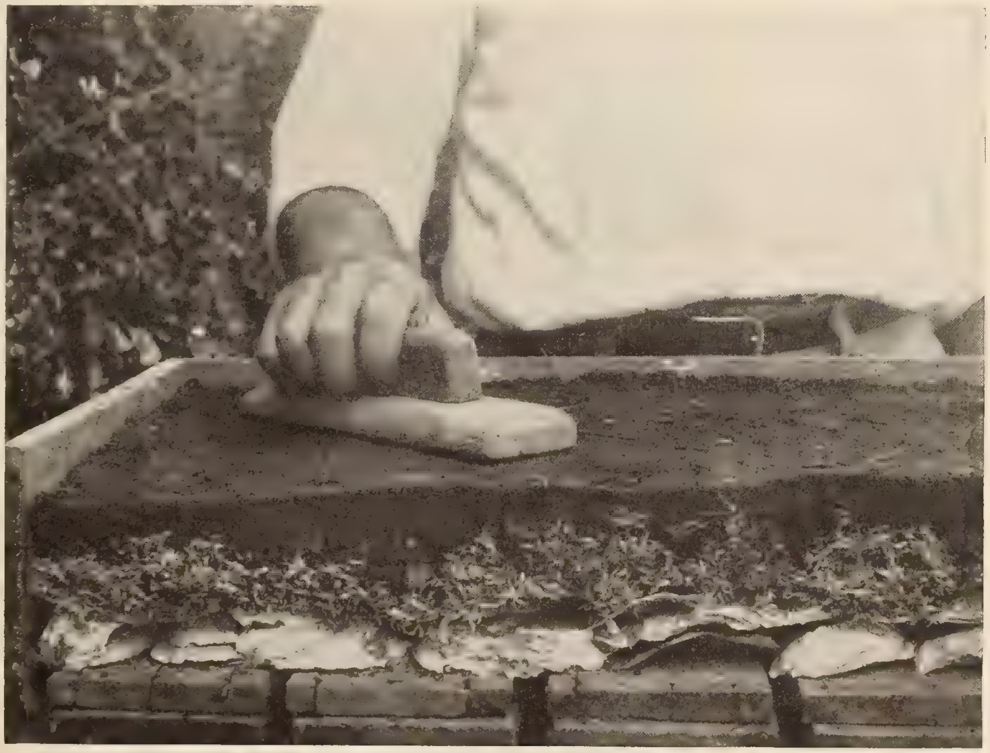
SEEDS can be started in any window garden. The temperature of the kitchen or living room is usually just right so that it is only necessary to provide a shelf or a table at the window on which the pots, pans or flats can be placed. Here they will be under the watchful eye of the grower all day and can be given the necessary attention without unnecessary waste of time or steps. If a greenhouse is available give a temperature of 60 degrees at night with a raise of 10 degrees during the day.

Annuals, perennials and even shrubs can be raised from seeds. These latter can be grown in the garden requiring no room in the house for starting.

Certain common annuals such as asters, zinnias, and such like are easily grown, and indeed everybody grows them; but how many of us have tried to raise heliotrope, begonias, dahlias, cannas and similar plants? Instead we buy these each year at individual root rates.

The following are plants which are annuals or which can be grown as such, that is, from seed to bloom the first year:

Abutilon
Ageratum
Banana (*Musa Ensete*)
Begonia
Canna
Castor-oil plant
*Cineraria maritima*
Cigar plant
Carnation
Cosmos
Dahlia
Gaillardia
Geranium
Heliotrope
Lantana
*Lobelia Erinus* and its varieties
*Nicotiana alata*
*Nicotiana Sanderæ*
Petunia
Salvia
Torenia
Verbena


A "flat" of seeds, in section, to show how coarse drainage material is provided at the bottom. The seed board in use to "firm" the surface after sowing fine seeds

Have a good seed soil. One composed of equal parts of good garden loam or rotted sod, and leaf mold, with sufficient sand to insure good drainage, will give good results. If leaf mold is not available, get the soil from a piece of ground which has been well fertilized for a couple of years, and add sand. The amount of sand will vary according to the character of the soil. Never use a clay, because it will bake, making it hard for the seeds to break through the surface.

The seeds can be sown in pots, pans or flats—the flats being soap or similar boxes, and three inches in depth. For this work I prefer pots or pans, preferably pans (which are merely shallow pots). In the bottom place some drainage, such as broken pots, coal clinkers or stone. Over this should go some rough material which can be had by screening the seed soil through a mesh of a quarter or three eighths of an inch. On top of this put about an inch and a half of the screened soil and press it down. This should bring the top of the soil to within about a half inch of the top of the pot or pan. In pots more drainage will be necessary than in pans or flats. I prefer a six or eight-inch pan for most of this work.

Where only a comparatively few seeds of a given kind are to be sown two kinds can be sown in the same pan, a division being made through the centre with a small, thin stick. The seeds are scattered around thinly and covered with fine soil. To get it on evenly I use a sieve which has a mesh about the size of mosquito netting; such a sieve can indeed be made out of a small box and wire mosquito netting. The amount of soil covering the seeds will vary according to the size of the seeds. An eighth of an inch will suffice for most seeds, but where the seeds are very fine, such as petunia seeds, for instance, only a very thin covering is necessary.

If the seeds are sown in flats, several kinds can be put in the same one. The flat can be divided as suggested for the pans by means of thin sticks or the seeds can be sown in rows.

After covering, the soil should be watered to settle it. This can be done with the coarser seeds with a fine-rosed watering pot, but the fine seeds should be watered by placing the pan in a vessel of water, allowing the water to soak up from below.

A "pan" with seed sown and labeled

Watering the seeds until they germinate is a particular, but not difficult, operation. If a piece of glass is placed over the pot it will prevent the rapid evaporation of water, thus insuring a more even moisture in the soil, and the less watering done before the seeds come up the better, provided the soil is moist at all times.

As soon as the seed leaves appear above the soil, the glass should be removed from the pot or pan, and for this reason it is better to sow the seeds in pans rather than flats because all the seeds will not germinate at the same time.

As soon as the little plants are large enough to handle they should be pricked out into flats or other pans and shaded with a newspaper until they have taken hold of the new soil and commenced to grow. From this time their culture will be the same as if they were asters, stocks or zinnias.

The Abyssinian banana (*Musa Ensete*) which is such a useful plant when one wishes to make a tropical effect in the garden, has large seeds which must be sown early in order that the plant may be of use; February or early March is none too early. The seed soil already recommended can be used, but the pots should be kept in a warm place; if bottom heat is available, so much the better. If bottom heat is not available soaking the seeds in warm water for twenty-four hours prior to sowing and then keeping the pots in a warm place, such as near the stove, will greatly facilitate germination.

All seeds of a hard, flinty nature, such as the canna, must be soaked in hot water before sowing. My method of doing this has been to pour over the seeds, nearly boiling water, placing the vessel containing the seeds where the water will remain warm — on the pipes in the greenhouse, or on the back of the kitchen stove — but the water must not get so warm as to cook the seeds.

An equally successful way of treating canna seeds is to file or cut through the flinty outer covering, but not so deeply as to injure the germ. It is only necessary to cut through the covering sufficiently to allow the expanding insides to break through easily. If either of these methods is not used the canna seeds will be very slow to germinate.

Begonia seeds are very fine and must not be covered. The seed soil in which begonias are sown should be of very friable loam; the addition of leaf mold is essential, and watering overhead should be avoided at all times. I have always been able to grow begonias from seed very easily by using a seed soil which contained equal parts of rotted sod, leaf mold, sand, and a small amount of finely broken charcoal, a handful of charcoal to a six-inch pot full of soil being about the right proportion. The pans should be prepared as I have described, but the top soil on which the seed is sown should be very fine. Watering the soil by placing the pan in a dish of water will settle the soil sufficiently to cover the seeds; but I have taken some dry spaghnum moss and rubbed it through a fine sieve until a very thin layer of moss covered the seeds. This will prevent the hardening of the surface of the soil from watering. Petunia seed is also very fine and better success will be had in growing the plants if the same methods are used.

Both begonias and petunias must be pricked out when the plants are very small.

A covering of cloth to take the water prevents the loss of fine seed

To do this successfully take out a small portion of the soil containing the seedlings with a knife blade, laying it on the work bench, and break up the soil carefully so as not to injure the roots. This can best be done by dividing it with the knife blade or the thin end of the dibble.

To pick up these small plants I use a pair of forceps as they are too small to handle comfortably with the fingers. These forceps I make from a piece of barrel hoop having the points fine. A dibble is indispensable in pricking out the plants. I make mine from a piece of pine about three eighths of an inch square and three or four inches long, making a flat point on one end and a round point on the other. The round point is used to make the hole in which to put the plant and the flat point or edge to break up the soil in which the seedlings are, and also to firm the soil about the little plant after it has been placed in the new soil.

The soil in which I prick out the plants is usually made from the same ingredients and in the same proportions as the seed soil in which the seeds are started, but to which a small portion of very well decayed horse manure has been added.

In growing plants from seeds the amateur must keep in mind the fact that *species* will reproduce themselves from seed, but that most *varieties* will not reproduce the same kind of a flower as the parent plant. When one has a particularly fine variety it will be necessary to multiply the plant from cuttings. Of the plants already mentioned, the following can be expected to come true, or nearly true, to the parent plant; ageratum, banana, castor-oil, cineraria, cigar-plant, carnation, cosmos, gaillardia, heliotrope, lantana, lobelia, nicotiana, salvia, torenia, and verbena. The varieties or species of abutilon are not usually offered by seedsmen, but you can purchase from them packets of seeds containing a mixture of choice varieties and colors; but such delightful bedding varieties as Souvenir de Bonn and Savitzii, can be perpetuated by cuttings only.

The tuberous begonias which are especially fine for bedding purposes in shady places can be purchased in single, double, and the frilled forms; the seeds will come fairly true to the name (type), but there will be a wide variety in color, which will make a very pleasing effect. Of the ever-blooming bedding varieties, such as Erfordiæ, Vernon, semperflorens, one can expect the seed to produce plants true to the name and color, but the habits of the plants may vary somewhat.

Canna seed is a lottery; if the seeds were saved from fine varieties you will get a few worthless plants, a large number of fairly good varieties, but which probably will not be worth keeping, and possibly one form (if you are lucky) which will be worth naming and disseminating; there is always this chance.

Dahlias, particularly the single sorts, are far more fascinating to grow from seed than cannas. Every plant will produce flowers three inches and more in diameter, and in all shades of color, from white and yellow to deep red. The seedlings need not be pricked out until the first pair of true leaves is produced, or even a little later. Then they should be put into two-inch pots, and later shifted to larger pots as the growth demands. To produce flower-

These young plants are ready for "pricking out" into more room ing plants the first year, the double sorts should be sown not later than March, while the single varieties will produce flowers even though the seeds are not sown for a month or two later.

The geranium has been so highly cultivated and hybridized that the various named varieties do not come true to seed, but perfectly pleasing forms can be thus secured. As with the cannas, one always stands the chance of raising something very much worth while. This is just what forms the inducement and fascination of raising from seed many of these plants which one ordinarily buys already started from the florist. So strong a hold has this fascination of producing new things on some people that whenever you meet them they have a new batch of seeds or seedlings to tell you about.

The petunias have one peculiarity, or, at least, it might be called that. When the plants get large enough so that a selection can be made, the larger and stronger growing plants had best be discarded; this is particularly true of the double sorts, for the breeding of these plants has been carried so far that the plants that have the better flowers are those which have the weaker constitution when young.

Unlike the more common annuals, all the plants I have named will transplant into the open much better if grown in pots. Having pricked them into flats an inch or so apart, they should be transplanted again into pots just as soon as they have made sufficient growth to cover the ground. As fast as the plants grow they will need to be shifted into larger pots. The only exception to this is the lobelia, and because of the large quantities usually wanted, it is better to grow them in flats and they can stand the shock of transplanting much better than the other plants.

Have you ever wished to have a big display of irises, phlox, and the other gorgeous perennial plants? These can be grown from seed with as little trouble as the common annuals. The time which is commonly recommended for sowing these seeds is in July or August, out-of-doors in a cold frame, or in the open. But better plants can be had by starting the seed in the house or greenhouse in February or March, or in a hotbed or coldframe a little later when the weather becomes warmer. It is better to start these seeds under glass where the temperature and moisture of the soil can be absolutely controlled, and, besides, the sooner the seed is sown after it ripens the better it will germinate.

Scatter the seed evenly over the surface before "firming"

Fresh seeds from last year's crop can be purchased at the present time, and should be sown just like the annuals. Many of these seedlings, however, are more delicate when they first come up, and to reduce the likelihood of their being attacked by the "damping off" fungus add a shovelful of finely broken charcoal to each bushel of soil. This fungus suddenly makes its appearance, rotting the stems near the surface of the ground, causing the young plants to fall over and die. Should your seedlings, by any chance, become infected, immediate measures must be taken to stop the disease, otherwise all the seedlings may be killed within an hour or two. Hot sand is a very effective check. Put some sand on a shovel in the furnace and when it becomes hot put it in a fine screen and sift it over the plants, until a very thin layer has accumulated on the surface of the soil. The sand must not be hot enough to burn the plants of course.

To prick out, lift out a chunk of soil with a few seedlings

Most of the perennial seeds will germinate in from one week to two months. When the seedlings have made two characteristic leaves in addition to the seed leaves, they must be pricked out. It is very unwise to delay this for any length of time for the plants will become drawn and weakened which will necessitate weeks of nursing to get them back into proper condition. This is really the most critical period in their life.

All the coarser growing perennials should be pricked out into three-inch pots; the smaller growing kinds, such as the alpine, arabis for instance, will have sufficient room in a two-inch pot. Instead of pricking the plants into the centre of the pots, as is the usual custom, better success will be had, particularly with the tender-rooted kinds, if they are placed to one side of the pot. Having been pricked out, they should be watered, placed in the greenhouse or window, and shaded.

Take up each individual seedling with a stick or knife and transplant to new quarters

The best temperature at which to grow these until they have become firmly established in the pots is fifty degrees at night and sixty or sixty-five during the daytime. They can then be grown in a cooler temperature and hardened off preparatory to being placed out-of-doors. By the time all danger of frost is past and the ground in the garden is in good workable condition these plants will be of sufficient size to plant directly in the open.

Seeds which have come from a great distance, or old seeds, will require more attention than fresh seeds. Above all things do not overwater them. I have found that such seeds, if very sparingly watered after being sown, and kept on the dry side will germinate readily, whereas. if given an abundance of water they rot. There is an axiom among gardeners that seed packets that come from abroad should never be opened until the seed pan is ready for the seed to be sown at once and covered. Whether this is true or not I cannot say, for I have always followed it religiously. Friends, however, have told me of experiences which confirm it.

If, for any reason, the seeds do not come up within the time specified, do not become discouraged; water the soil carefully as it requires, and when hot weather comes, plunge the pan in a coldframe out-of-doors where it can have some shade. There are some perennials which take much longer to come up; *Ranunculus Lyallii,* which is probably the finest of the genus, is reported as having taken two years to germinate!

The only perennial with which I have ever had any trouble is the gasplant (Dictamnus). The first time I tried to germinate this was shortly after I had been given charge of a garden. Two years I bought seeds and sowed them, but they did not come up. Then I hunted up a gardener friend and asked him why. The reply was that if I had sown the seed as soon as ripe and left it alone the plants would have come up nicely the following spring. I followed the advice and found it was so.

The peony can easily be grown from seed when new varieties are wanted They should be sown as soon as ripe, but the seedlings seldom appear above the ground the first year for all the strength of the young plant goes to make roots.

The shrubs are just as easy to grow from seed as are the annuals and perennials. There are, however, very few shrubs grown from seed as a rule, because the nurserymen find, with few exceptions, that they can raise shrubs more easily and cheaply from cuttings. However, that need not deter the amateur. In walks through the woods or fields you will undoubtedly come upon some desirable shrub. If the seeds are ripe, pick as many as are wanted, take them home, and plant them at once. Almost without exception shrub seeds must not be allowed to become dry. If they do they will either not germinate, or will take two or three years to come up. Seeds which have no fleshy pulp about them can be sown directly in the ground, but seeds like barberry, dogwood, viburnum, and privet, should be soaked in water until the pulp has become sufficiently softened so that it can be easily separated from the seed. After cleaning the seed can be sown in the open ground. Shrub seed should be sown in beds not over six feet wide; if they are wider than that weeding is inconvenient. The rows in which the seeds are sown should be six inches to one foot apart. Put them a half to three quarters of an inch deep.

Start seeds now and by the end of summer you can have a border of perennials that will become better and better as time goes on

Any good garden soil will serve as a seedbed, but should the ground be clayey work into it peat or leaf mold, or put on a thin mulch.

Seed that cannot be sown at once is "stratified" to keep it from drying out. This consists of mixing the seeds with damp sand in boxes and storing them in a damp place so that the sand will not dry out. Large seeds can be stratified in a pit in the garden. They can then be sown in the spring. Some shrub seeds will not need stratifying but the seeds of the following genera must be stratified if they are not sown in the fall. Berberis (the purple-leaved barberry, can also be grown from seed as a large percentage of it comes true); Ceanothus; Cornus (usually does not germinate until the second year); Corylus; Daphne (very slow to germinate); Euonymus; Halesia, Ligustrum (sometimes two years necessary to germinate), Lonicera, Pavia, Ptelea, Rhamnus, Ribes, Rubus, Sambucus, Spiræ (when sown the seeds should be covered only slightly with soil), Staphylea, Styrax (usually dormant the first year), Symphoricarpos, Viburnum.

All the rose species such as setigera, Wichuraiana, Carolina, lucida, can easily be grown from seed, sown at once upon maturing, or they may be left in the hip on the plant until spring. Nearly all the genera in the heath family (Ericaceæ) such as Azalea, Adromeda, Clethra, can easily be grown from seed if sown as soan as ripe in pots or pans in peaty soil and placed in coldframes. Azalea seed need not be sown until early spring when the seeds should be sown thinly in a sandy, peat soil without covering and kept moist and shady. The young plants will need to be pricked out into boxes in a sandy, peaty soil and placed in coldframes where they can be shaded and stored the first winter in a light, well-aired, frost-proof pit.

## Why Some Seeds Do Not Grow

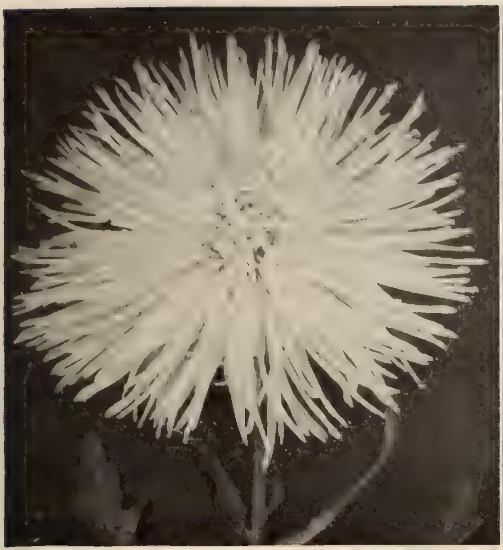
By G. W. K.

POOR stands of vegetables are usually due to one of two things — the seed having rotted in the soil, because of cold weather following early planting, or low germination because of the dust-dry condition of the soil when the seed was sown, followed by a long spell of hot, dry weather. This may be avoided sometimes by soaking the seed in tepid water for twelve hours before planting. This is specially applicable to peas, corn, beet, spinach, beans, etc.

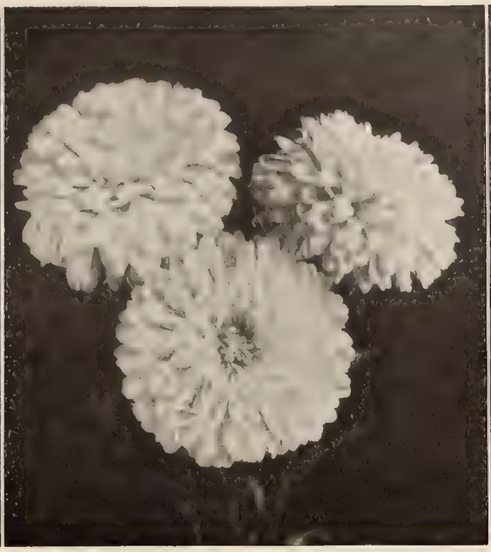
Be careful not to plant too deeply. Large, strong-growing seeds such as peas, beans, and corn should be planted from two or three inches deep; asparagus, beet, cucumbers, etc., one inch deep; carrot, mustard, lettuce, radish, turnip, cabbage, and other similar seeds, half an inch.

Prepare the seed bed in the usual way by digging, make the surface very fine by the use of the rake, smooth and make firm; then sow the seed thinly on the surface. Spread evenly over the seed, one quarter to one half an inch deep, according to the size of the seed, a mulch of thoroughly rotted, mealy manure sifted through a half-inch sieve; then give a thorough watering. Should very old manure not be available, substitute leaf soil. This method is ideal for perennial seeds, many of which lie dormant a long time.

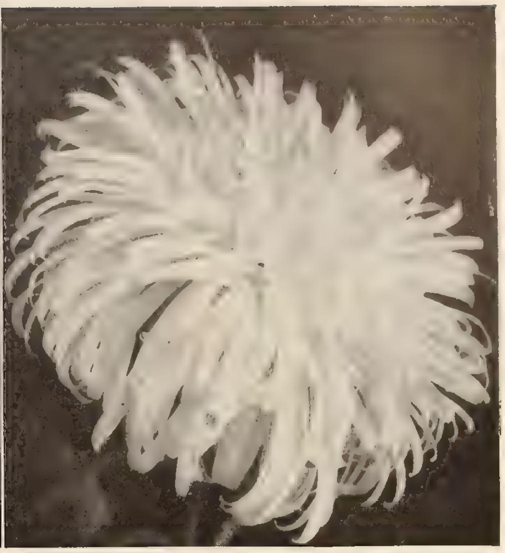
Sow choice seed, such as coleus, geraniums, heliotrope, lobelia, pentstemon, etc., in seed pans or flats with proper drainage. A good soil is two parts loam (or good garden soil) with one part leaf mold, to which is added a 6-inch potfull of sand to each bushel of the mixture. The leaf soil must be put through a ½-inch sieve to exclude undecomposed leaves, sticks, etc. Fine seed, such as lobelia, should only be pressed into the soil with a smooth piece of board. After sowing, water carefully with a very fine rose and place the seed boxes in a greenhouse, frame, or sunny window, covering with paper to prevent the top soil from drying off too quickly. Be careful when watering the seedlings previous to transplanting, for they are very liable to damp off. Sow begonia, primula, calceolaria, cineraria, ferns, and the choice double petunia in pots. Water the soil, and after it has dried off a little sow the seed and press it into the soil; cover each pot with a sheet of glass.



A fantastic form of the flat rayed or globe aster with convolute rays (Electric)



The reflexed form with short, flat rays (Pink Beauty)



A progressive type of globe aster with long, flat rays (Orego or Comet)

# Growing High Quality China Asters — By G. W. Kerr, Pennsylvania

### START NOW TO HAVE PLANTS THAT WILL GIVE FLOWERS FROM MIDSUMMER UNTIL AFTER FROST — AN ANALYSIS OF THE TYPES AND AN APPRAISAL OF THE BEST VARIETIES FOR SPECIAL PURPOSES

THE China aster has taken a strong grip on popular appreciation because of all the annuals it gives a greater return than any other in massiveness of individual plants and in the variety and immensity of its flowers. It is equally useful for planting in the garden, in beds, and in borders, for growing as a pot plant for house decoration, and as a source of flowers for cutting. The immense variety of color and form has resulted in the introduction of some hundreds of varieties. Not by any means its least important characteristic is its late-flowering quality, giving (from spring sowing in the open) blooms when most other annuals are passing away.

The aster resembles the chrysanthemum in many respects but comes into bloom somewhat in advance of the latter and endures until frost. In color the aster gives us blue, red, pink, purple, and white; a few but little grown varieties show a slight tendency toward yellow. Its season extends from the end of July from outdoor sowing or from early in July from seeds started under glass, or indoors, in March.

Single plant of the Victoria type. 18 inches high. Plenty of flowers for one root!

### TYPES AND VARIETIES

The original single aster is a daisy-like flower with a yellow disc, measuring perhaps a couple of inches across. In its improved double forms we have flowers as large as five or six inches, with the rays either flat or quilled or the two forms combined as in the anemone chrysanthemum. They may be analyzed thus into two divisions and four groups:

*A*. Flat rayed: 1, incurved or ball-shaped (Globe asters); 2, flat or reflexed.

*B*. Tubular or quilled, in which only the outer rays are flat; 3, inner florets short; 4, all the florets long and quilled.

The most important forms and practically the only ones really worth growing are included under the first division (A), which is the oldest type.

The Globe asters include the types offered in catalogues as Truffaut's, Peony-flowered Perfection, Semple, Triumph, which are of the late-flowering, branching type.

The flat or reflexed group includes the Chrysanthemum-flowered, Washington, Mignon, Victoria, Queen of the Market, Crown and Comet types, which last is the earliest flowering and best for use in the flower garden.

The third group, the quilled asters, include Dwarf Bouquet and Shakespeare, useful as dwarf plants for bedding, growing six to eight inches high.

The fourth and last group, with all the florets elongated and quilled, is represented by the Lilliput and Victoria Needle types. The plants are medium to tall and have the same general habit as those of the first and second groups.

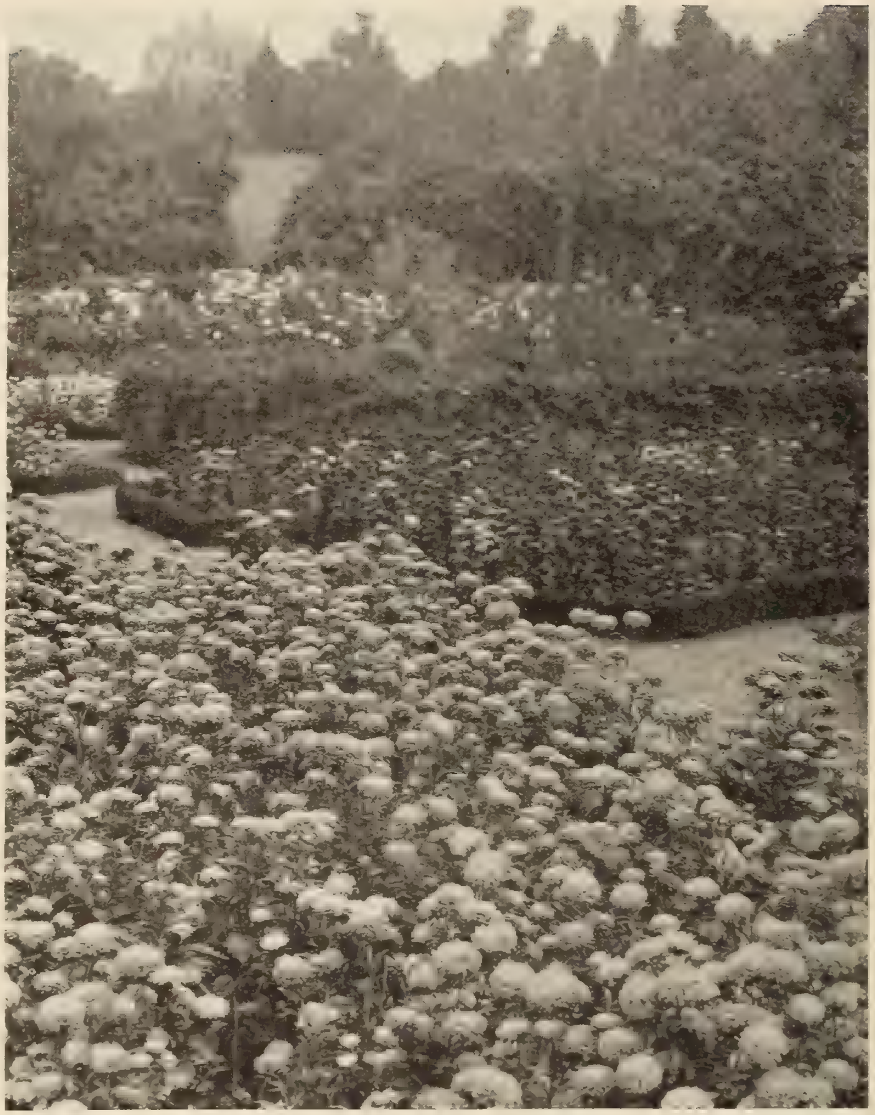
A discussion of the finer points of what I regard as the best of the more popular varieties of the day will be found on page 100.

There is no royal road to success in aster growing — the way is open to all; but to secure typical plants with a plentiful supply of magnificent flowers rivalling the indoor

The dwarf Waldersee aster, only six inches high, for bedding and edging. One plant grown chrysanthemum, the soil must be thoroughly prepared and well enriched.

Asters adapt themselves to practically any soil, though best results are obtained when grown in a rich loam, not too heavy and retentive, and where the temperature is cool; though with a little extra care in providing moisture and a cool soil, they can be most successfully cultivated in almost any section of the country. Turn over the soil to a depth of at least twelve inches, at the same time incorporating a liberal quantity of well-rotted farm-yard manure — you can hardly give too much —and rake into the surface soil a dressing of acid phosphate at the rate of four ounces to the square yard.

Although good results are obtained by sowing the seed in the open ground, those who have space in their greenhouses or frames should certainly start the seed under glass, as a good and even germination is more likely to result and transplanted asters invariably make much finer plants, being more shapely and producing better and larger flowers than when sown directly where they are to bloom, and bloom is also had earlier.


As with most annuals. asters are best used in rich masses of one color. Useful alike for garden color and for cutting

In the greenhouse sow the seed in shallow boxes containing carefully prepared soil, consisting of equal parts of rich sandy loam and leaf mold; if the loam is heavy, add sand to lighten it. A very early start is no advantage as the plants may become too tall and leggy ere the weather is fit for planting in the open. The middle of March is a suitable date for sowing aster seed indoors in the neighborhood of Philadelphia to plant out in May. Sow broadcast and cover with not more than one-quarter inch of fine soil.

After sowing the seed, water carefully with a fine rose and cover with paper so as to conserve the moisture and hurry germination. Indiscriminate watering is often the cause of poor stands. Give water only when the soil actually requires it, and use a fine rose on the watering can to prevent the top soil (and seed) from washing.

The moment the seedlings begin to break the soil, remove the paper shade. When the seedlings are from one to two inches in height, transplant to other boxes, or better still, into a mild hotbed, or even a coldframe, setting them three inches apart. Shade the transplanted seedlings for a day or two until they show signs of making fresh growth. At that time the sun will be very powerful and air must be given whenever possible, by lifting the sash on the side opposite that from where the wind comes, and as the season advances gradually harden off the plants by removing the sashes entirely during the daytime.

When the trees are coming into leaf the plants may safely be set out in the beds or borders. An hour before transplanting give the plants a thorough soaking of water which will enable you to lift them with a good ball of soil adhering to the roots.

If the seed is sown in frames the same general procedure will, of course, be followed except that boxes will not be required, the seed being planted directly in the soil in the frames, the rows being three inches apart. About the time for setting the plants in the open a second sowing of seeds should be made for late flowering, either in frames as before or where the plants are intended to bloom.

In sections where the flower buds are apt to blight during the heat and drought of midsummer, plant the seed in a frame or cool greenhouse during March, transplanting the seedlings when they are about one inch or so in height to stand three inches apart; or they may be potted singly into small pots, kept in a rather cool place so that they may make sturdy growth, and planted in the open when all danger of severe weather is past, a fairly safe guide being to plant when the trees are coming into leaf. Plants grown by this method will give bloom much earlier than when the seed is sown early in the open ground, and generally will avoid both blight and the attacks of the aster (black) beetle. These evils may also be escaped by late sowing in the open — early June. At that period, however, the weather may be very dry and watering must be regularly attended to until the seed has germinated and the seedlings thinned out or transplanted. The plants from this late sowing come into flower safely during the cooler early fall days.

When planting into their permanent quarters, give each plant ample space to develop itself. This is to say for the tall varieties eighteen inches apart and for the dwarfs eight inches. And after planting keep the hoe working between the plants and water thoroughly during hot, dry weather. See to it that the top soil is always loose; never allow it to become hard and baked, as that prevents the admission of air to the soil and immediately checks growth — and a check in growth invites attacks of aphis.

Just about the time when the plant is approaching maturity it sometimes happens that the central growth becomes yellowish and shrivelled, due, as I believe to an insect, and sometimes called the "blight." Now I do not believe in aster blight, a conclusion based on extended experience of my own and the opinions of the large aster seed growers of New York State. The trouble, whatever it is, can be controlled if growers will spray their plants with arsenate of lead and kerosene emulsion at least once a week from the time the plants are four inches high until they come into flower.

## Some Troubles of the Aster

By L. B., New York

THE blue root aphis is one of the worries of the aster grower. It seems to be almost inseparable from growing asters and may be found equally on strong growing plants and on those that are sickly and weak. It undoubtedly weakens the plants on which it is found in any quantity. The point of attack is around the stem just at the union of the stem and root, and slightly below the ground level. Heavy dressings of wood ashes seem to make the ground uncongenial to the pest and mulching with tobacco stems is also recommended. The liability of attack is much more marked on hot, dry ground than on moist, wet soil.

Another trouble all too familiar is the aster blight, the exact nature of which is not recognized. Its effect on the plant is too well known. This has been called the yellow blight because of the general appearance of the plant which makes a bright yellow, straggling growth. The parts affected do not die or wilt but the flowers are affected and the growing tip becomes greenish yellow instead of dark green. The flowers are imperfectly formed and the color becomes yellowish like that of the affected leaves. It seems the only thing to do is to pull up and burn the diseased plants, for when once the trouble appears it seems to be likely to crop out here and there from time to time among otherwise healthy plants. Good sturdy growth in the beginning and proper attention to cultural details will almost ensure plants against attacks of this disease.

The stem rot or wilt is another trouble occasionally appearing and this is due to a fungus which enters the plant near the ground line and cuts off the water supply. At the ground line the stem is plainly rotted so the trouble is easily recognized. Here again the normal color of the flower changes to yellowish green and the plant shows a fading or blighting over a portion of it, usually one side. Pull up and destroy any affected plants as soon as the appearance is recognized.

A sudden wilting of the entire plant is often due to the appearance of the common white grub, the immature form of the May beetle. Of course, if the plant is pulled up and the grub is seen at work, there is no doubt as to the source of the trouble. Here again the tendency to attack is more marked on dry soils. The remedy that has been successfully used of late with the same grub where it attacks strawberries may be used — that is, pouring a teaspoonful of bisulphide of carbon on to the ground right in contact with the collar of the plant.

The aster beetle, dull black with hard, shell like wings about an inch long and rather narrow, is, it must be confessed, a terrible pest in some localities. It does not trouble the plant until the flowers appear and then, if it is not shaken off, it devours the petals by wholesale. I have tried all the insecticides in general use without any good result. The only way to avoid this attack is to go over the plants every day, knocking off the beetles into a vessel containing a small quantity of kerosene. The attack ceases as suddenly as it commences and may be dodged somewhat by getting the flowers extra early or, on the other hand, late.

None of these diseases should be regarded as so serious as to cause the abandonment of the cultivation of the China aster. Rather their possibilities should urge us to thorough attention to proper cultural methods.

A typical plant of the branching type (Semple). The branching asters are most useful for cutting because they have long stems and bloom freely. There are early, dwarf, and late kinds which are effective for borders, etc.

# Vegetables for a Family of Seven — By M. T. Richardson, New Jersey

### A COMPLETE PLANTING TABLE FOR THE HOME GARDEN, SHOWING WHAT CAN BE DONE ON A PLOT 52 x 86 FEET

WHEN we moved to the suburbs we boldly determined to have a garden. City born and bred, we knew absolutely nothing about the ways of growing things; but this did not deter us. We engaged an old German, who recommended himself highly, to plant and cultivate, at $1.50 a day. The first year Fritz managed the garden entirely, and the results were disappointing — or would have been to any but ultra-urbanites used to dried-up, grocery-store vegetables! Even we saw its shortcomings, but we forgave much for the taste we got of tender peas and unthinkably sweet corn. It was just a taste, for Fritz believed in planting once and for all. His idea was to plant seeds in the spring and let them grow, hoeing out the worst of the weeds when absolutely necessary. Any interference with such natural forces as bugs or blight was ridiculous. When the squash vines suddenly wilted, and I demanded the reason.

"Bucs," was the laconic reply.

"But can't we do something?" I urged.

Fritz shook his head. "It would be no juse," he declared. "The wetter iss too dry. The wines grow goot, comes bucs und dry wetter, und they die. Anudder year we might couldt get squashes."

#### A GOOD DETERMINATION

We determined that another year we would get squashes, if we had to care for the garden ourselves. And that is just what we did do, perforce, as even old Fritz was not available. Meanwhile we fell to studying catalogues, books, magazines — everything we could get on the subject of garden.

By the time fall came we had learned our a-b-c's, and in October we started our next year's garden by clearing our 52 x 86 foot plot and burning all refuse. Then we had a good layer of manure spread on the ground and ploughed in. Through the winter we planned the garden, drawing a plan to scale. It takes careful planning to make less than one eighth of an acre supply vegetables for a family of seven, but it is quite possible. We succeeded in raising a bountiful supply for ourselves, with plenty left over to give to our friends and neighbors. Of course, we discriminated in planting vegetables, omitting those we do not care for. We did not plant potatoes, which can be bought as good as they can be raised; we did not raise eggplant, cabbage or brussels sprouts. But we planted strawberries and an asparagus bed, and of peas, beans, corn, tomatoes, beets, carrots, melons, squashes, cucumbers, lettuce, parsley, onions, okra we had more than we could use. As we have neither hotbed nor coldframe, we bought tomato and cauliflower plants, but all the other vegetables were started from seed in the open ground. We made several plantings of most vegetables, a little seed at a time. That lesson, too, Fritz taught us. He had put in six rows of string beans, with the result that by July not only we, but our neighbors on every side, paled at the sight of a bean! This time we planted one or two rows at a time, and had plenty of tender, young, stringless beans all summer.

#### THE FIRST PLANTING

We began planting on April 1st. As the ground had been all ploughed in the fall, we had only to rake it and make our rows with a wheel hoe. We put in radishes, spinach, peas, lettuce, carrots. After the planting was done, an hour a day kept the garden in good condition, though two hours would have been better, if we could have spared the time. The wheel hoe proved a great time saver.

#### AND A LESSON

The mild weather lured us into planting some things too early. We put in corn the tenth of April, and it did not germinate. We found that peas, lettuce and spinach can hardly be planted too early, but nothing is gained by trying to hurry in corn, melons, squashes or lima beans. Our own mistakes, as well as Fritz's, taught us much. Another year we will not plant so many of the little "first early" peas, which are not nearly so sweet as the larger ones. We will make only one planting of Early of Earlies, and thereafter use Gradus, Telephone or Champion of England.

#### SUCCESS WITH PEAS

An old farmer of our acquaintance told us his method with peas, and it was such a success that I give it here. Make a trench about four inches deep with the wheel-hoe and scatter in it a thin layer of well-rotted manure. Sow the peas, rather thickly, directly on the manure and cover with soil. This sounds dangerous, but produced bumper crops for us. We did not use the manure for plantings later than June 1st. Be generous in sowing peas, if the vines are thick they seem to do better; while corn must be planted thinly, or else the young plants must be thinned to one or one and one half feet apart in the row.

The last of April or the first of May is time enough for the early varieties of corn, of which Golden Bantam is (to us) the most delicious. Stowell's Evergreen for a main crop is sweeter and tenderer than Country Gentleman.

Spinach can be planted early, and it is well to have several rows, four at least, as it takes a good deal to make a "mess." We cut ours three times, then took it up to make room for another crop. For later planting of spinach use the New Zealand, which will stand the hot weather.

#### BEATING THE CUTWORMS

The tomatoes taught us another lesson. Two dozen plants, set out the last of April, died. The cold weather in early May discouraged some, while the rest were neatly cut off just above the ground by the cutworms. On May 15th we set out more plants, and around each one we put a circle of pasteboard, lapping the ends, and pressing it into the ground about an inch, leaving an inch above the ground. As the cutworms work on or near the surface, this simple device saved our tomatoes. When the plants were two feet high we trained them to a single stalk,

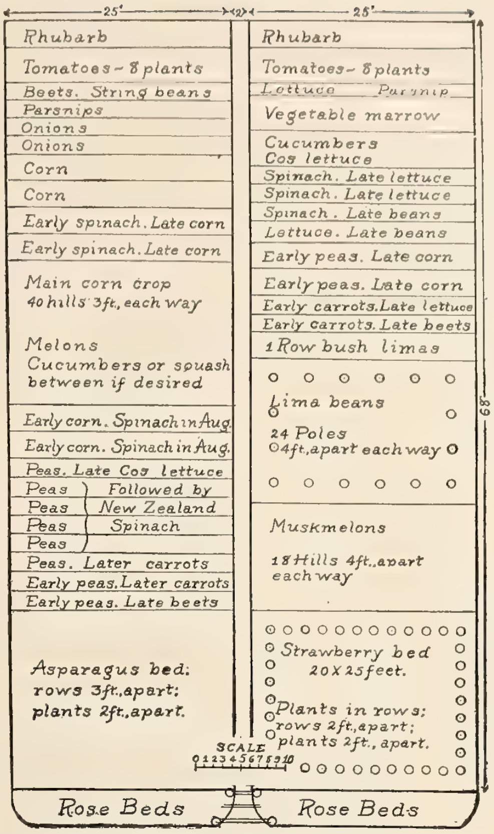
A border of herbaceous plants and roses at one end of the vegetable patch gives flowers for the house or two at the most, and tied them to stout stakes four feet high. Through the summer we tied the tomatoes several times, as their weight pulls them down. We used rags, instead of string, to tie them.

Squashes, cucumbers and melons require much the same treatment. They must not be planted too early, particularly squashes and melons. Our muskmelons were such a success that we felt more than paid for the trouble we took. We first prepared the hills carefully, putting a shovelful of well-rotted manure in each hill and covering it with soil. Then we planted ten seeds to a hill (some on May 10th, the rest on May 15th) and covered each hill with a cheesecloth-covered frame — just a soapbox with the bottom knocked out and cheesecloth tacked over it. These boxes we left on the hills until the vines filled them, and thus evaded the striped beetle. The boxes are not absolutely necessary, but are the best way to keep the vines clean and healthy. Some hills were left uncovered, and we kept down the beetles with hellebore and by putting wood ashes around the hills. We also planted some radish seeds near these, as a sort of decoy for the beetles. When the vines were two feet long we pinched them back (carefully, for melon vines are tender) and began spraying with Bordeaux mixture and arsenate of lead. We sprayed frequently during the summer, about every three weeks, and as a result our vines were healthy and vigorous when our neighbors' were suffering from blight and bugs. When they blossomed we gave them nitrate of soda — a solution of one eighth pound of nitrate of soda to a pail of water. This we did again when the fruit set, and once more just before it ripened. As a result we had an abundance of delicious melons nearly up to frost. Every morning we picked cool, dewy melons for breakfast.

In the accompanying table the vegetables marked with an asterisk we did not raise, but the data for them comes from a reliable source, and is included to afford a comprehensive table for the reader to work from. All the rest of the table is the result of actual experience.

Our 52 x 86-foot garden supplied us with an abundance of vegetables until frost, with beets, carrots, onions and parsnips and canned tomatoes and corn for winter use. On September 15th, for instance, we picked two baskets of tomatoes, twenty-four ears of corn, eight melons, two cucumbers, two vegetable marrows, two bunches of beets, five carrots, three quarts of lima beans. We could have had okra, spinach, and Cos lettuce also, but did not pick them.

To make a small garden pay well four things are necessary: careful planning, plenty of fertilizer, frequent cultivation, and brains, and these are not always to be had at $1.50 a day.


25'
2'
25'
68'
Rhubarb
Tomatoes – 8 plants
Beets. String beans
Parsnips
Onions
Onions
Corn
Corn
Early spinach. Late corn
Early spinach. Late corn
Main corn crop
40 hills 3ft., each way
Melons
Cucumbers or squash between if desired
Early corn. Spinach in Aug.
Early corn. Spinach in Aug.
Peas. Late Cos lettuce
Peas
Peas
Peas
Peas
Followed by New Zealand Spinach
Peas. Later carrots
Early peas. Later carrots
Early peas. Late beets
Asparagus bed: rows 3ft., apart; plants 2ft., apart.
Rhubarb
Tomatoes – 8 plants
Lettuce Parsnip
Vegetable marrow
Cucumbers
Cos lettuce
Spinach. Late lettuce
Spinach. Late lettuce
Spinach. Late beans
Lettuce. Late beans
Early peas. Late corn
Early peas. Late corn
Early carrots. Late lettuce
Early carrots. Late beets
1 Row bush limas
Lima beans
24 Poles
4ft., apart each way
Muskmelons
18 Hills 4ft., apart each way
Strawberry bed
20 X 25 feet.
Plants in rows; rows 2ft., apart; plants 2ft., apart.
SCALE
0 1 2 3 4 5 6 7 8 9 10
Rose Beds
Rose Beds

All the plantings, including succession crops, are shown on this plan. Each "row" referred to in the planting table below is 25 feet long

| VEGETABLE | VARIETY | DATE OF PLANTING | QUANTITY | CROP MATURED | REMARKS |
|---|---|---|---|---|---|
| Asparagus | Palmetto, Colossal | April 1, or fall | 50 roots | Not cut for 2 years | Plant in trenches, 3 feet apart, roots 3 feet apart. Fill trenches gradually. Use plenty of manure on bed. |
| Beans, lima | Burpee Improved Bush<br>Burpee's Giant Podded | April 20 to May 1<br>May 15 | 1 row† to ½ pkg.<br>24 poles to pt. | 45 to 60 days<br>90 to 120 days | Plant 2 inches deep, 6 inches apart in rows 2 feet apart. Crop, ½ bushel.<br>Set poles 4 feet apart, plant 5 beans to each pole. Pinch off when vines reach top of poles. Crop, 2 bushels. |
| Beans, string | Bountiful<br>Hudson Wax<br>Bountiful<br>Wax<br>Bountiful | April 15<br>May 1<br>June 1<br>June 15<br>July 15 | 2 rows, ⅔ pt.<br>1 row, ⅓ pt.<br>2 rows, ⅔ pt.<br>1 row, ⅔ pt.<br>1 row, ⅔ pt. | 60 to 90 days | Plant 2 inches deep, about 4 inches apart in row. Best to plant frequently a few at a time. Plant every 2 weeks if desired. Crop, 16 quarts. |
| Beets | Crimson Globe | April 15<br>May 15<br>June 15<br>July 15 | 2 rows, 1 pkt.<br>1 row, ½ pkt.<br>1 row, ½ pkt.<br>2 rows, 1 pkt.<br>Or about 3 ozs. for all planting | 60 to 90 days | Plant seed thinly in drill 1 inch deep. Thin by pulling largest beets each time. Winter in sand. Crop, 2 bushels. |
| *Cabbage | Early Jersey<br>Late Flat Dutch | May 15<br>June 15 | 24 plants, 2 rows<br>24 plants, 2 rows | 100 to 150 days | Buy plants, or start seed indoors: early var. March 1st; late, May 1st. |
| Cauliflower | Dwarf Erfurt | May 15 | 24 plants, 2 rows | 100 to 115 days | Buy plants or start seed indoors March 1st. |
| Carrot | Harbinger<br><br>Half Long | April 1<br>April 15<br>May 1 | ¼ pkt., 1 row<br>¼ pkt., 1 row<br>½ pkt., 2 rows | 70 to 100 days | Plant seed thinly ½ inch deep in rows. Thin out by pulling largest for use. Winter in sand. Crop, 1 bushel. |
| Corn | Golden Bantam,<br>Holmes Delicious<br>Stowell's Evergreen<br>Stowell's Evergreen<br>Stowell's Evergreen<br>Golden Bantam | April 24<br>May 10<br>May 10<br>June 1<br>June 15<br>July 1 | 4 rows, 1 pkt.<br>4 rows, 1 pkt.<br>50 hills, 1 pt.<br>10 hills, ⅕ pt.<br>10 hills, ⅕ pt.<br>4 rows, 1 pkt. | 90 to 100 days | Plant early and late varieties (Golden Bantam, Holmes Delicious, etc.) in rows 2 inches deep, 2 feet apart in rows. Main crop in hills, 3 stalks to hill, hills 3 feet apart. Remove suckers. Abundant supply from July 25 to frost. |
| Cucumber | Cool and Crisp<br>Cool and Crisp<br>White Spine | May 1<br>May 15<br>June 15 | 5 hills, ½ pkt.<br>5 hills, ½ pkt.<br>5 hills, ½ pkt. | 50 to 75 days | Hills 4 feet apart. Spray with Bordeaux and arsenate of lead 3 or 4 times. Crop: about 25 to 50 to a hill |

* Were not planted in garden described in text.

† "A-row," as shown on the plan, is twenty-five feet long.

VEGETABLE PLANTING TABLE FOR A FAMILY OF SEVEN — *Continued.*

| VEGETABLE | VARIETY | DATE OF PLANTING | QUANTITY | CROP MATURED | REMARKS |
|---|---|---|---|---|---|
| *Eggplant | Black Beauty | Put out plants in May | 6 plants | 90 days | Plants 2 feet apart. |
| Lettuce | Wayahead | March 31 | 1 row, ¼ pkt. | 40 to 50 days | Transplant to make head. Shade with cheesecloth in hottest weather. Crop, 25 heads to row. |
| | | April 15 | 1 row, ¼ pkt. | | |
| | | May 1 | 1 row, ¼ pkt. | | |
| | | May 15 | 1 row, ¼ pkt. | | |
| | Cos | June 1 | 1 row, ¼ pkt. | | |
| | | July 1 | 1 row, ¼ pkt. | | |
| Muskmelon | Emerald Gem<br>Fordhook<br>Long Island Beauty | May 9 to 15 according to weather | 25 hills, ¼ pkt. each variety | 90 to 120 days | Plant in hills, 4 feet apart each way, 12 seeds to hill. Thin to two vines to hill. To elude striped beetle cover each hill with box with cheesecloth top, or plant radishes with melon seeds. When vines are 2 feet long, spray with Bordeaux and arsenate of lead every two weeks until fruit ripens. Pinch vines back when 3 feet long. Crop, about 100 fruits. |
| Onion | Prizetaker | April 4<br>April 24 | 1 pt. sets, 2 rows | 100 days | Plant sets 2 inches deep in rows 2 feet apart. Crop, ½ bushel |
| Parsley | Triple Curled | April 15 | 1 row, ¼ pkt. | 60 days | Soak seeds; cover lightly with soil. Slow to germinate. |
| Parsnip | Hollow Crown | April 15 | 2 rows, ½ pkt. | After frost | Scatter seeds thinly in rows, or thin after plants start. Crop, about 100. |
| Peas | Early of Earlies | April 1 | 2 double rows, 1 qt. | 50 to 60 days | For early peas (up to May 1st) scatter manure in trench, sow peas directly on this manure and cover 3 inches. For succession, make new planting when the last one is 2 inches high. Crop: about ½ bushel to each planting. |
| | Gradus | April 1 | 2 double rows, 1 qt. | | |
| | Telephone | April 15 | 2 double rows, 1 qt. | | |
| | Telephone | May 1 | 2 double rows, 1 qt. | | |
| | Gradus | June 1 | 2 double rows, 1 qt. | | |
| | Gradus | June 15 | 2 double rows, 1 qt. | | |
| | Thos. Laxton | July 1 | 2 double rows, 1 qt. | | |
| *Pumpkin | | May 15 | 10 hills | 15 weeks | Hills 6 feet apart. |
| Radish | Cooper's Sparkling | April 1, and every 2 weeks | 1 row, ½ pkt. | 25 to 40 days | Plant seeds ½ inch deep. Short crop — plant between rows of longer crops. |
| Spinach | Boddington's Improved | March 31 | 4 rows, ¼ oz. | 35 to 40 days | One inch deep, rows 1½ feet apart. Cut first planting 3 times, then remove (June 15th) to plant corn. Let New Zealand grow all summer. |
| | | April 15 | 4 rows, ¼ oz. | | |
| | New Zealand | May 1 | 4 rows, ¼ oz. | | |
| | Viroflay | August 15 | 4 rows, ¼ oz. | | |
| Squash | Vegetable Marrow | May 15 | 6 hills, ½ pkt. | 50 to 60 days | Plant in hills, 4 feet apart, 12 seeds to hill. Thin to 2 vines per hill. Crop, 50 each. |
| | *Hubbard | May 15 | 6 hills, ½ pkt. | 110 to 120 days | |
| Tomato | Earliana<br>Beefsteak<br>Golden Morn | May 10 | 24 plants | 90 days | Set plants 3 feet apart. Pinch back to one stalk, tie to stakes or trellis. |
| *Turnip | Early Milan, white | April 15 | 1 row, ½ pkt. | 60 to 90 days | Half-inch deep. |

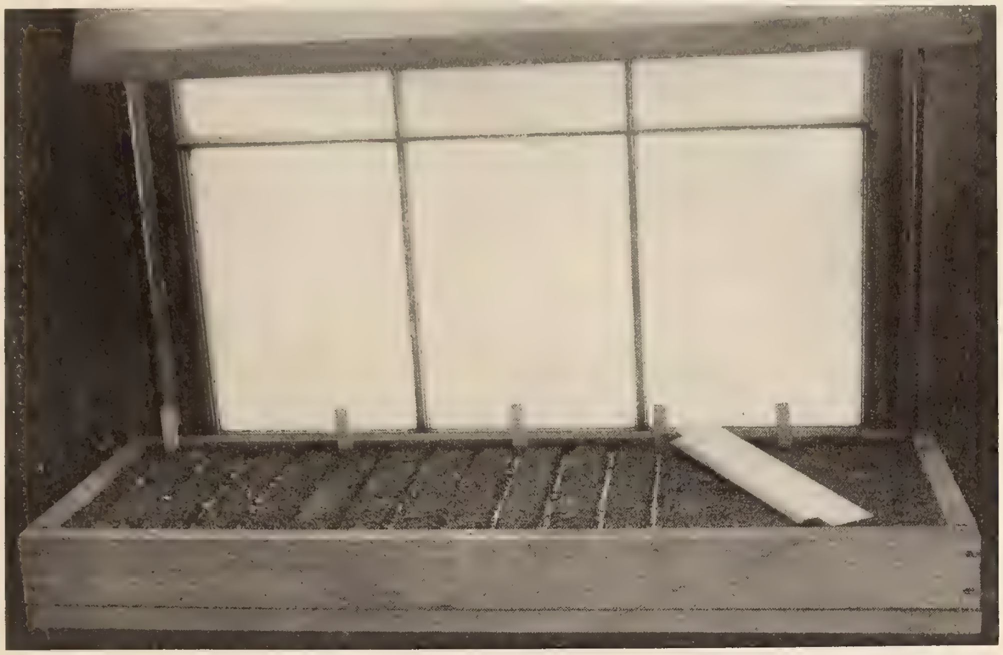
* Were not planted in garden described in text; all else is an actual recast of last year's work.

One day's harvest, September 23. An ample supply for the family's needs

Looking across the strawberry patch on June 25. The peas are in the background

# Starting Vegetables Indoors — By F. F. Rockwell, Connecticut

LENGTHEN THE GARDEN SEASON THIS YEAR BY MAKING A BEGINNING NOW, WITHOUT A GREENHOUSE — RELIABLE VARIETIES THAT HAVE STOOD THE TEST OF YEARS FROM THE SEED PACKET TO THE GARDEN



A shallow box on a table in front of a window is an excellent arrangement for starting seeds indoors. Sow each kind separately in shallow drills. Use a sharp-edged board as a marker, pressing it into the soil

MANY managers of small gardens lose six weeks garden dividends every year because they do not realize that early plants can be successfully started without a greenhouse, or even a hotbed.

An early start means not only that your garden returns will begin weeks earlier, but that later crops, by becoming well established early in the season, have a longer season in which to mature, and are in much better condition to resist prolonged droughts.

Neither a costly greenhouse nor a cumbersome hotbed is essential. And the fact that you will probably require only a few hundred plants gives you a distinct advantage over the large-scale gardener, because you can make use of ready-to-hand conditions which would not be adequate for his use.

### SELECTING THE RIGHT VARIETIES

In the first place, order your seeds at once. But don't do it in such a hurry as to do it thoughtlessly. Getting good early stuff depends largely upon selecting the right varieties; and let me urge you keep to the known reliable kinds for your mainstay. Here is a list of the vegetables you will want to "start" early. The varieties suggested have stood the test of time and "made good." I have grown them all myself, and can give a recommendation first-hand. If your seedsman does not have the identical varieties he can supply you with something of the same type that will be equally good. The proper time for sowing indoors is also given in the table below:

SOW FEBRUARY 1ST TO MARCH 1ST

*Cabbage.* Wakefield, Glory of Enkhuisen.
*Cauliflower.* Burpee's Best Early, Snowball.
*Onion.* Prizetaker, Ailsa Craig, Silverskin.

SOW FEBRUARY 15TH TO MARCH 15TH

*Beets.* Crosby's Egyptian, Early Model.
*Brussels Sprouts.* Dalkeith.
*Celery.* White Plume, Golden Self Blanching.
*Lettuce.* Grand Rapids, Mignonette, May King.

SOW MARCH 1ST TO APRIL 1ST

*Cucumber.* Davis Perfect, Fordhook Famous.
*Eggplant.* Black Beauty.
*Pepper.* Ruby King, Chinese Giant.
*Potatoes.* Bovee, Noroton Beauty, Irish Cobbler.
*Squash.* Hubbard, Gregory's Delicious.
*Tomato* (early). Earliana, Chalk's Early Jewel.
*Tomato* (late). Matchless, Dwarf Giant.

SOW MARCH 15TH TO APRIL 15TH

*Corn.* Golden Bantam, White Cob Cory, Crosby Early.
*Melon, Musk.* Netted Gem, Emerald Gem, Hoodoo.

There is no magic about a greenhouse, in itself, that makes plants grow. If you can provide the same conditions of temperature, moisture, and light, that you find in a greenhouse you can start your plants just as well without it as with it. Where plants are to be grown by the thousand, the matter of convenience alone makes the greenhouse a necessity. But for the home gardener, who wants but a few dozen plants of a kind, results as good can be obtained without one. You can grow your own plants cheaper than you can buy them, and more important still, you can grow *better* plants, as a rule.

### STARTING PLANTS IN THE HOUSE

There are very few houses indeed, where there is not some room with a sunny window or two, in which the night temperature, after February 15th, can easily be kept up to 45 or 50 degrees.

Now this suggestion need raise no immediate cry of "muss" and "dirt." You can buy a few yards of nice neutral-toned, self-colored, sheathing or building paper, to protect floors or rugs. There is probably an old table available for use! If not, it is a matter of no great ingenuity to construct a temporary shelf, just below the level of the window, which will support a number of "flats." So two of the three requisites—light, heat, moisture—are provided almost before you've begun to think about the thing!

"Moisture" does not mean keeping the soil in your seed boxes and flats dripping wet. The proper amount of water for the soil will be suggested later, but the condition of the *air in the room* is one of the most important factors in this growing of plants in the house. A hot, dry, stale (deoxygenized) atmosphere will very likely prove fatal to your efforts. Steam heat and furnace heat rapidly deprive the air of what moisture it may contain. So the air in the room must be kept "fresh" by giving ventilation at *all times* when the outdoor temperature will allow it, and also by keeping bowls or saucers of water evaporating on all radiators or registers.

Coal or illuminating gas in any perceptible quantity will also destroy plant life.

### PREPARING SOIL FOR SEEDS AND PLANTS

If you have no good soil about that is not frozen solid, the quickest and simplest way to provide the necessary soil will be to get a bushel or two at the nearest florist. If that can't be done, take the crow-bar or pick-ax and break up a few lumps in the garden. Leave these for a few days in a box — for five cents at the grocers, you can get a cracker-box which will hold about a bushel — near the furnace or stove. Let the dirt not only thaw out, but *dry* out until it will not stick together when compressed in the hand. (If you happen to possess a woodshed with a dirt floor, just the sort of soil you want can be scraped up there — light "chip-dirt" full of rotted bark, chips, and sawdust.)

To this garden soil add about a third each of old, thoroughly rotted manure and coarse sand. "Leaf-mold" — the light spongy soil formed from decayed leaves and twigs — may be used in place of the manure. It is to be had in any fence-corner or hollow where leaves collect and rot. If you are too lazy to get the leaf-mold, you can buy either that, or "cocoanut fibre," at a florist's. The idea in adding the sand is to "cut" the mixture,

The young seedlings may be "pricked out" to give more room to each little plant. A coldframe outdoors is ideal for this

making it more friable; and the rotten manure makes it more spongy, light and porous. These various ingredients should be sifted through a screen of quarter-inch mesh — an ash sifter is just the thing — and well mixed together.

This preparation of the soil will save much disappointment and may explain past experiences in "bad seed" as you thought. Bad or dead seed is a very unlikely thing as a matter of fact.

### STARTING THE SEEDLINGS

The "flats" mentioned are simply shallow boxes, two to three inches deep. Save up a couple of cracker boxes and bottom them, leaving cracks a quarter of an inch wide, or bore half a dozen half-inch holes.

Select one or two of the two-inch deep ones, and cover the bottoms with coarse material, such as the screenings from the chip-dirt and soil. Then fill to within half an inch of the top with your prepared soil and give a good thorough soaking. Put on about a quarter of an inch more of soil, level it off, and mark off lines about three inches apart. Sow the seed thinly — six to twelve to the inch in these, and cover very lightly. *Do not water the surface of the soil.* The surplusage of water at the bottom will soak *up*, and in a few hours will have given the seeds a more thorough and even application of water than you could possibly give with a watering can. I start thousands of seedlings this way every spring, and always get better results than I did with the old method.

Now cover each flat with a pane of glass. (This may not be *necessary* with seeds of quick, strong, germination like lettuce and cabbage, but it is the *sure* way.) This miniature greenhouse roof retains the moisture evaporated from the soil, and at the same time admits the light.

Do not water again until the surface of the soil becomes *dry*. With the glass covering this should not be necessary until after the seeds have sprouted — two to ten days, according to variety and temperature.

To get things started quickly, the flats, immediately after planting, may be given "bottom heat." In the house, the back part of the kitchen range, at night, or near it, or on a piece of plank on a radiator, will do to supply this extra heat. Another good plan is to make a little framework support to place over a radiator, so that the "flats" may be held at some distance above it. Do not let the boxes come in direct contact with a hot dry surface, as it will warp them and dry the soil very quickly.

Or the seedlings may be raised in small boxes indoors or in a frame and later on transplanted directly to the open, after hardening

This extra heat should be given only until the seeds begin to germinate — not half a day longer. Then move them to where the temperature will be as near as you can give it to the normal.

Water early on bright mornings, only when water is needed, as indicated by a drying out of the surface, and then water *thoroughly*, but keep flats in the sun so that the foliage will be dried off by night.

The most insidious enemy of seedlings is the dreaded "damping off"!—a black rot attacking the frail stems at the surface of the soil. Keeping the leaves and soil dry, and giving fresh air whenever possible, I have found to be the most effective precautions against it.

Keep the little seedlings "growing on," giving an airing every day the outside temperature permits (but never letting the draught strike directly upon the plants) until they are ready for "pricking off," or transplanting. They are ready for this operation about the time the second true leaf forms.

Fill some of the three-inch flats about a third full of old manure, and then add about another third of the prepared soil. (Soil enriched with bone-dust, a good handful to a flat, will do if no manure is at hand.) Then soak thoroughly and fill level full with soil.

The little seedlings are taken as gently as possible from the seed box, removing a clump at a time, earth and all. Held gently between thumb and forefinger of one hand, they are lowered into a hole prepared for them with the forefinger of the other, or with a "dibber" — a small pointed stick. This hole should be large and deep enough to take the little bunch of roots and half to two thirds of the stem. Then with both thumbs and forefingers the little plant is "firmed" into place. They should be put from two to four inches apart each way: fifty in a 13 x 21-in. flat, being a good number.

Give a gentle watering, and keep shaded at least during the middle of the day for two or three days, until they take hold. Then give all the light and air possible, watering as before on bright mornings.

### MAKING ROOM

Now by the time the second sowing of seeds, tomatoes, etc., has reached the transplanting stage, the earlier cabbage and lettuce will be ready to go outdoors. A coldframe is just the place for them. But if you haven't one, a few boards and old window sash, or light frames covered with "protecting cloth" (which is to be had for a few cents a yard) will answer the purpose. They will stand a little freezing, but should be *thawed out in the shade*.

For several nights before time for setting out in the garden they should be "hardened off" by being left unprotected.

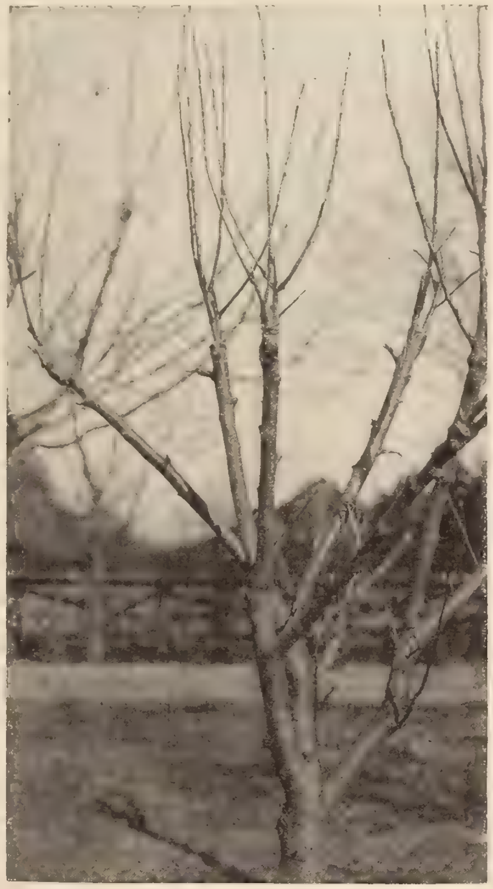
# Better Fruit from Proper Pruning — By W. C. McCollom, Long Island

SOME THINGS THE AMATEUR CAN DO NOW TO ENSURE BIGGER AND BETTER FRUITS AS WELL AS TO KEEP THE TREES AND BUSHES IN PROPER CONDITION

PRUNING is the most important work in the fruit garden during March; for, remember that if it is not attended to now it must be left undone until next year. I prefer March to December for pruning established trees because, normally, the vitality of a tree is at its lowest in midwinter and severe weather in late winter will often kill back the wood behind the cuts, which means simply that all the work must be done over again. Don't wait until April when the sap is flowing because then strength will be needlessly wasted on the wood which is to be removed. In general we prune to remove surplus wood and to give proper shape and balance to the tree. But there is another consideration for fruit trees. The pruning one season causes an outcrop of twigs the next. We remove these to keep an open centre — to let in light and air. Different trees require different handling according to their kind and their vigor.

The pruning of an apple tree is an important factor in its fruiting proclivities. All poor, weak interior shoots should be entirely removed. Use a saw for this work and cut the branches clean. Leave no shoulder and always paint the wound afterward. This is the work of but a second and is a very good habit to form. Whether the tree is an apple or an oak, painting the wounds keeps the wood from decaying. Generally about one third of the current season's growth should be removed, but under no circumstances cut back on the previous season's growth, as that is where the fruit buds occur. This treatment, of course, refers to young trees that are spending most of their effort growing, and are about to the fruiting age. On older trees the growth is less rank, most of the force being spent in the production of fruit. Then, necessarily, less pruning needs be done. With trees in bearing, a general thinning out of poor, weak inner shoots and sufficient thinning of the other branches to admit air and light will suffice; but it is proper training in the young stage that produces good healthy wood in old age.

Cut right down at the ground line when removing the old wood from gooseberry bushes



This tree was top-worked last April by cleft grafting to change it over to a better variety. More grafts were put in than needed. It is time to thin out now

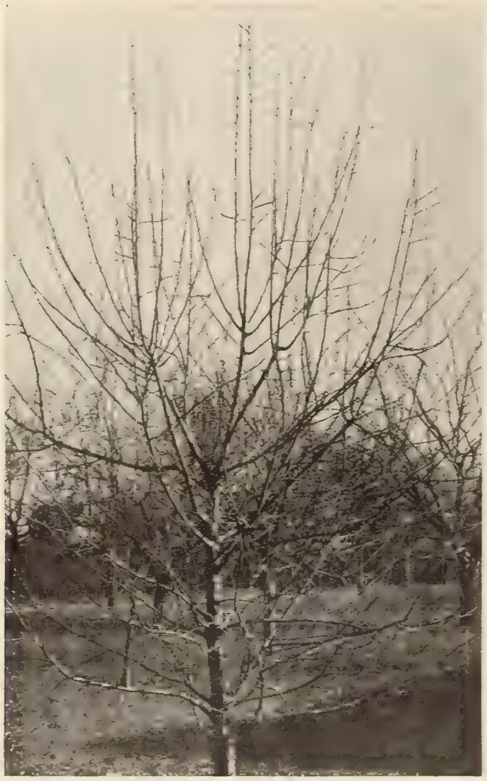
The pear requires very much the same treatment as the apple; but being of dwarf habit a little less pruning suffices. Pear trees are naturally good bearers, and while they will do reasonably well without pruning, the fruit is improved in quality if the tree is intelligently pruned. All the interior branches of the pear should be removed and when young the trees can be pruned quite severely. Cut back the new growth about one half and watch the wood for the development of spurs; when this occurs the pruning can be lessened, but you can always safely remove a surplus of branches. If the tree has begun to fruit but also continues to make rank growth, cut it back. I have some pears which are trained horizontally and I cut back each season the previous season's growth to within three or four eyes. These pears bear abundantly. They have developed spurs like a grape under this severe pruning.

Apricots, nectarines and peaches are much alike — they all fruit on new wood and the object of pruning should be to cut out any old wood that is incapable of producing good healthy young wood. Always cut out severely from any tree that shows a tendency to overcrowd itself with branches, as all these trees (but especially the peach), will actually kill themselves by overbearing, if allowed to.

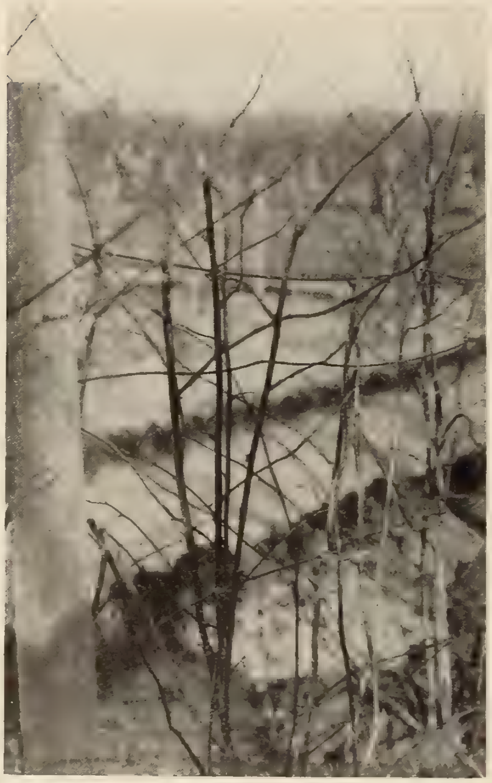
The plum might perhaps be classed with the peach, but I think that it requires much more pruning even. It fruits all over, from the main stem to the tips of the growth, and to get plums of quality, heavy pruning is essential. Cut back each season's growth at least two thirds, even though you thereby remove a number of fruit buds. Always cut out any interior branches and cut out any that are crowding one another.

Grapes fruit on new wood and when once up to the fruiting stage the current year's growth should be cut back to two eyes. This will produce fruit of a much higher standard than you get from a lot of scraggly shoots. Keep the suckers removed and never allow a plant to support more than three canes.

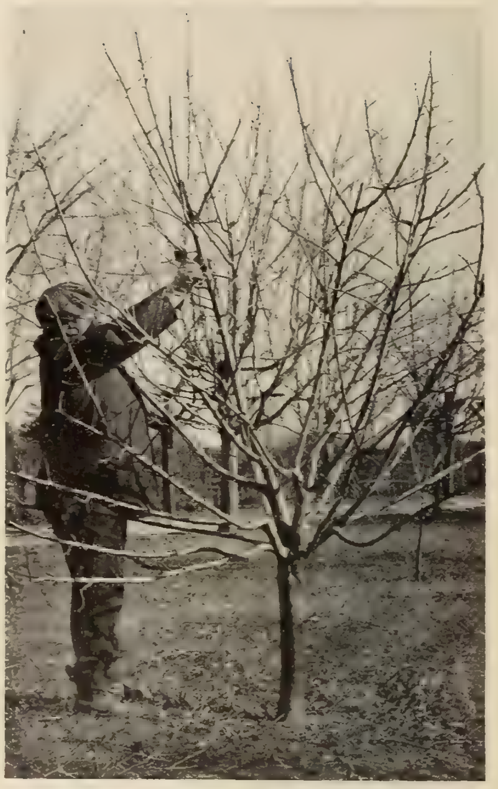
The old, useless wood of a currant bush is in the centre. Cut it out



This young tree, almost ready for bearing, is carrying too much wood and needs attention



Raspberries before pruning. Remove all side shoots and reduce to three canes



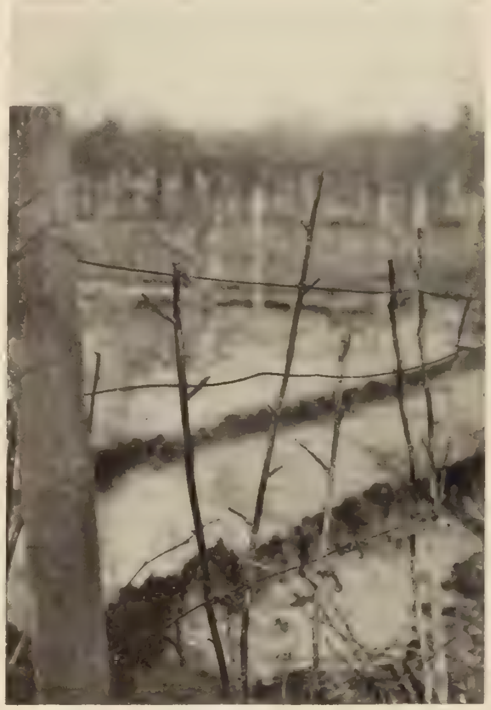
A companion tree to that shown on the left, but it has been properly thinned out

Cherries fruit on spurs and when once arrived at the fruiting stage they require but little pruning — merely a general treatment to keep up good health, which consists in removing any old wood that has outlived its usefulness and a proper controlling of any tendency to overcrowd by removing shoots as seems desirable.

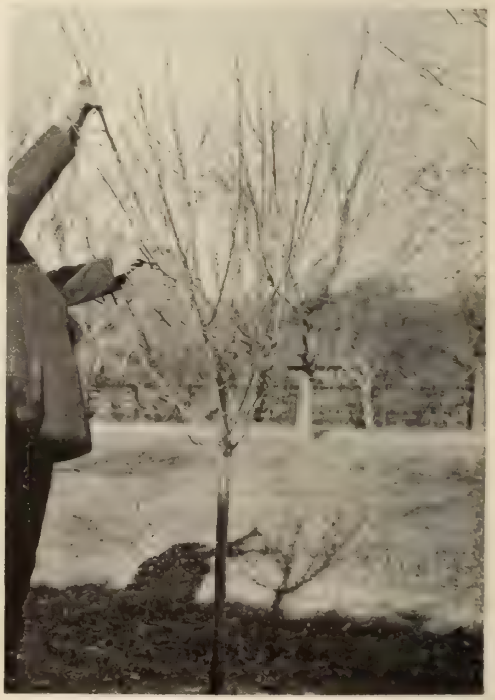
Quinces require less pruning than any of the so-called tree fruits. They are dwarf, short-jointed growers, and this in a measure accounts for their great fruiting propensity. All new wood is available because it is of the right kind. To use a gardener's term the tree makes no "grass"; to gardeners grass is a useless article that requires lots of cutting.

The cane fruits (raspberries and blackberries) require very severe pruning, but it should be done later in the season, and if attended to regularly at that time the spring work will be much easier. But if it has been neglected in the first, you must attend to it now. The tendency is to produce too many canes to a root. Better cut back all but three shoots on each plant, and cut them off right at the ground. Cut out all the old canes, of course; they can easily be distinguished by the bark. The older the cane the more the bark peels, while the bark on the young canes is smooth and of a much brighter color. If the canes have been thinned out the pre-

The young wood that starts on the inside of a fruit tree must be cut out yearly

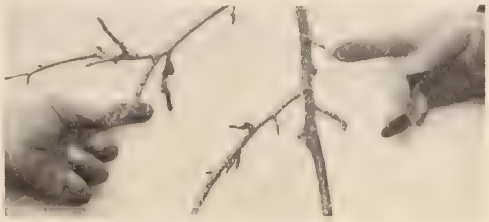


The raspberries shown above, after pruning



The lower hand shows where last year's pruning was done. Cut this year where the shears are ceeding season, it is merely necessary in the spring to cut back the tips of the growth about one quarter, also removing any side shoots. Canes that were not touched after fruiting last year would require similarly cutting back, although they will not have made so strong a growth.

Currants and gooseberries are very similar in their requirements — a good thinning out of all old wood that has become too old to bear with freedom. If this is attended to yearly very little other pruning will be necessary. In removing old wood from these two bush fruits, cut right to the ground and give the preference to the young growth that you will notice pushing its way up through the centre. Any wood that has lost its brightness and is a dull dead color at the base had best be removed. If, however, the bushes have been neglected for several years it would not be advisable to cut back all the old wood in one season. If you did so you probably would not have any bush left. In such a case, cut out one half the old shoots one season and the balance the next. A new lot of young canes will spring up to take their places.


Leaf buds, long and slender (bare hand). Fruit buds are short and stout (gloved hand)

# Sowing Vegetables for Succession — By I. M. Angell, New York

A PRACTICAL SCHEME FOR MAKING THE MOST OF A SMALL PLOT, AND KEEPING THE TABLE SUPPLIED WITH FRESH VEGETABLES ALL THE SEASON — USING THE SAME SPACE THREE TIMES OVER

MAKING one and the same small garden plot serve for three successive gardens in the one year — sowing at three different times — was one of the best gardening experiences we have had. It showed the possibilities of "intensive" culture on city lots, and gave us really fresh young vegetables all one season while laying the foundation for several crops in the next — that is the third sowing was designed to relieve the usual spring rush and actually gave us results ahead of the same things sown in earliest spring.

The spring sowings had yielded their full, or at least were past their best by August first. After re-fertilizing and digging, the midsummer garden was sowed, from which we gathered some fine vegetables when neighboring gardens were on the wane. The second harvest out of the way by the middle of October, the ground was manured and dug for fall sowings.

### THE SPRING SEEDING

The most important seeds in garden number one were those that entirely outlived their usefulness before the end of July, because from those we received the full value of our time and money, but the others which were pulled up while still in bearing (to make room for the later sowings) gave enough return to make it worth while to sow. In the former class were extra early potatoes, peas, lettuce, kohlrabi, radishes, extra early corn, chard (sowed for greens only), onion sets (sowed to use small), carrots and beets (also to use small).

Those that were removed while bearing included cucumbers, parsley, and bush string beans. Although carrots, beets, onions, and chard would have continued in good condition if left in the ground, we place them in the first list for the reason that they had such excellent qualities when used while very small, that after a trial there were few left to clear off when August arrived. Spinach and turnips would probably have been found equally satisfactory. Here follow the details of each crop:

*Peas* — a first early and two second early varieties were sown at different times, from the end of March to the first of May. All were out of the way before the first of August.

*Potatoes* — A very early variety was planted the end of March and dug at intervals from the end of June to the end of July. These would have been considered rather small, perhaps, but were very acceptable, coming while new potatoes were almost a luxury.

*Radishes* — Sown at various times up to the middle of June. All were out of the way before the ground was wanted for a second planting.

*Carrots* — Sown early in April and produced tender young roots from the second week in June until the end of July.

*Chard* — Provided greens, from an early April sowing, which supplied the table from the middle of June until time to replant the plot in August.

*Beets* — Sown the second week in April, they attained the size of plums before the middle of June and by the end of July all had been used. A sowing made as late as May 2d produced roots of cookable size for a month before the ground was required for midsummer seeding.

*Lettuce* — A sowing made the second week in April yielded heads of good size from the middle of June to the middle of July. Even the May 16th sowing was out of the way before the end of July.

*Onions* — Seeds were sown on April first. By the end of July they had formed fine young onions an inch thick. These were all pulled to use as scallions. Sets planted April 1st were pulled from the end of May to the end of July.

*Kohlrabi*, began yielding the third week in June and kept up the supply for more than a month. This was sown April first.

This is the garden in August after having yielded its first crops. Plan for succession this year

| | SOWED | FIRST PICKED | LAST PICKED |
|---|---|---|---|
| SPRING SOWING | | | |
| Potato, Bovee | March 31 | June 24 | July 30 |
| Peas, First of All | March 31 | June 8 | June 24 |
| Peas (late) | April 28 | July 3 | July 28 |
| Lettuce, Crisphead | April 1 | June 16 | July 13 |
| Kohlrabi | April 1 | June 20 | July 21 |
| Corn, Golden Bantam | April 4 | July 16 | July 30 |
| Chard (for greens) | April 1 | June 16 | out* |
| Onions (seeds) Prizetaker | April 1 | July 31 | out |
| Onions (sets) | April 1 | May 30 | July 31 |
| Carrots, Chantenay | April 1 | June 14 | out |
| Beets, Eclipse | April 12 | June 15 | out |
| Beets, Eclipse | May 2 | June 30 | out |
| Parsley, Early curled dwarf | April 27 (transplanted from house) | June 30 | transplanted |
| Bush string beans, Fordhook | April 29 | June 27 | July 16 |
| SUMMER SOWING | | | |
| Bush beans | August 10 | October 7 | October 23 |
| Carrots | August 5 | | |
| Lettuce | August 3 | October 7 (heads) | out |
| Beets | August 1 | September 28 | out |
| Endive | August 1 | October 16 | out |
| Corn | August 1 | October 15 | |
| Parsley | August 1 | transplanted for house | |
| Peas | August 1 | September 17 | |
| Radishes | August 1 | August 28 | October 15 |
| Spinach | August 1 | October 15 | out |
| Turnips | August 1 | October 16 | out |

*The word "out" is used in the last column to indicate a crop that would continue to bear if left in the ground, but which we preferred to pull and use young.

*Corn* — An extra early sort, sown a month ahead of corn weather, bore from the middle to the end of July.

*Bush string beans* — An early variety sown the end of April, yielded from the end of June to the middle of July, and were pulled out before they started in on their second yield.

*Parsley* — Sown indoors, and transplanted to the garden April 27th; leaves were picked as needed from the end of June until it was transplanted to make way for later sowings.

### THE MIDSUMMER SEEDING

Garden number one having been cleared off, the ground, manured and redug was ready to be replanted. At first glance it would seem that there are not many vegetables on the list that could be successfully sown as late as August 1st, but those tested by ourselves form quite an array. Bush beans, carrots, lettuce, beets, endive, corn, parsley, peas, radishes, spinach and turnips all gave satisfactory results when sowed in August. They were put in as near the first of the month as possible, to make all the growth possible before frost. The hardy ones caused no anxiety, as they endured several light frosts. These were carrots, lettuce, beets, endive, parsley, spinach and turnips. The tender sorts, such as bush beans, cucumbers and corn were saved from the cold by a covering of old rugs and similar material.

Vegetables, picked before they get old and tough, are the priceless advantages of the home gardener

*Bush beans* — From an August first sowing we made good pickings of first quality beans before frost caught them. Those sowed August 10th yielded from October 7th to October 23d.

*Peas* — The August 1st sowing of peas yielded full sized pods in less than seven weeks. These were an extra early sort. The crop, however, was not nearly so heavy as from spring sown seed. In an unfavorable season they probably would not bear enough to pay for sowing.

*Carrots* — Very small roots were the result of seed sown August 1st. These were of good size for pickling and for soups, etc.

*Lettuce*, planted in early August bore leaves large enough to use before the middle of September, and well formed heads from the first week in October until the ground was cleared.

*Corn* — An extra early sort sown August 1st, matured by the middle of October.

*Radishes*, sown at various times in August are out of the way for the fall sown seeds.

As we could not duplicate the cool, moist conditions of spring for the germination of our August seeds, we did the next best thing and firmed the soil well after sowing. This helps to draw the moisture in the soil where the seedlings can use it. When they had made a start the surface was stirred to form a mulch.

### THE FALL SOWING FOR SPRING

Last on the list was our fall planted garden. It was no hardship to spend a mellow October day in sowing these seeds. To do the same thing on a raw day in March or April would have been far less pleasant. Although some were winter killed and others produced the same results as from spring sown seeds, there were still others that showed a decided gain on seeds sowed in April. Lettuce, chard, parsnips, carrots, and celery gave us the best return.

*Lettuce*, sown the last week of October began to produce small heads the middle of May and was in full bearing by the middle of June. This was a gain on the spring sown seed.

*Chard* yielded stalks large enough for cooking in early June. At this time spring sown chard was yielding leaves only.

*Parsnips* were not used till fall. They made an early start and by the middle of June the tops measured over a half yard.

*Carrots* — Produced roots of useful size at the end of June.

*Celery* — Yielded excellent stalks the following fall.

All these seeds were sowed the last week in October. As soon as the ground was frozen we covered the fall sown seeds with straw and manure. The rows were made as far apart as space permitted, to allow freedom in working the soil in the spring. When planted too close it is harder to cultivate and the weeds are more likely to get ahead of us. The mulch was taken off in March and the soil stirred as soon as the ground was sufficiently dry.

# A Bachelor Girl's Vegetable Garden—By Barbara Arden, New Jersey

SHOWING THE POSSIBILITIES OF THE ORTHODOX BACK YARD PLOT—FRESH VEGETABLES FOR THREE PEOPLE ALL SUMMER AND PLENTY OF CANNED PRODUCE FOR WINTER ON LESS THAN 700 SQUARE FEET

I AM living in a cottage of most modest dimensions, with a garden covering an area of not even a thousand square feet, and yet have experienced the delights of farming.

Three years ago, we (mother, sister, and I) decided to make our home in the country, and I at once became a wild enthusiast in gardening. I forked, I spaded, I hoed, I raked (oblivious of any Judge passing by), I planted, and — I learned and profited.

My first year's experiences were somewhat strange and amusing. At the sight of aphis or louse pests, I writhed, earth and cut worms made me shudder, and when I found a long, wooly caterpillar in my sleeve, I almost went into convulsions. Once I made bold to ask some agricultural persons how to protect cauliflower plants and was curtly told to "put paper collars on them." I did. Although long since, I can still hear the "ha, ha's," of my informants, when next they saw my plants with dainty little Dutch collars of white sketching paper, carefully pinned tight around each plant!

But I have become a staunch follower of THE GARDEN MAGAZINE and am rather vain of last summer's fruition. I started manipulations on the seventeenth of April and planted in succession, spinach, onion sets, lettuce, radishes, peas, beans, lima beans, corn, potatoes, celery, parsley, and chives. Oh, yes, I smilingly bade a neighbor "good morning" one day and was rewarded with a great clump of mint. No, I did not know he was transplanting. True to my femininity, I was only curious and diplomatic. With another neighbor, who owns chickens, I swapped bread crumbs and stale bread from the table for some rhubarb, English vegetable marrow, and a gooseberry bush — thus heaping nineteen varieties of vegetables in my garden. I planted beans at eight different times; peas three times; corn four times; spinach, Swiss chard, lima beans, onion sets, twice; lettuce and radishes, three times. It necessitated scheming and manœuvring to get in all I wanted, but I utilized every inch of ground. I planted in rows eight feet long, in between rows, and again in between these. As soon as a plant had outlived its usefulness, out it came, and in went something else.

My garden plan varied each month. For instance, Section I started with six rows of peas, and four rows of onion sets. In between the peas were planted three rows of the first planting of radishes, and three rows of the second planting of spinach. Between the first two rows of onions, one row of the second planting of radishes; between the next rows, one row of the second planting of spinach and one row of the second planting of corn. When the peas, radishes, spinach and onions had matured, two rows of the second planting, and two rows of the fourth planting of corn occupied that section. Two rows of celery were planted back of the fourth planting of corn. On the ridge separating the celery, I transplanted lettuce. Between the second row of celery and the rows of corn, I sowed the eighth and fifth planting of beans.

In Section II, were planted one row of onion sets and five rows of the second planting of peas. When the peas and onions were rooted out, there stood the potatoes which had been planted between the rows, and then the seventh planting of beans went in between the potatoes.

I commenced harvesting during the week of May 21st, and from then through the season there was not a day when I could not harvest something. We were never fond of beans until we had them from our own garden. I never saw such beans — (and certainly never ate any like them before), five and six inches long, tender and meaty. The peas, far from enough to satisfy our individual inward longing, were delicious. Another year, I shall plant peas eight times at least. The corn, Golden Bantam, is I verily believe "the sweetest corn on earth." "You can't buy corn like that," commented a neighbor who was presented with some. I was told I planted my stalks too near each other and to each row. True, but nevertheless from the two rows of the fourth planting, I got thirty-two ears. Another neighbor who was given a small basketful of potatoes, said, "I did not know you could grow potatoes here, in so small a garden. I shall have to plant some next year."

The tomato plants vied with each other. I trained them to one stalk and the result was pounds and pounds of smooth, solid,

| KIND | VARIETY | QUANTITY | COST | NO. ROWS 8 FT. LONG | NO. PLANTINGS | YIELD | COMMENTS |
|---|---|---|---|---|---|---|---|
| Beans | Bountiful Bush<br>Refugee | 4 pts. | 68c | 51 | Eight | 159 qts. | This variety's good enough |
| Beans | Henderson's Bush Lima | 1 pt. | 20c | 12 | Two | 17 qts. | Pole limas in the future |
| Cabbage | Early | 12 plants | 10c | 3 | One | 12 heads | They do get so buggy |
| Celery | Golden Self Blanching | 25 plants | 15c | 3 | One | 20 heads | Shall try again on a farm |
| Chives | | 1 clump | 10c | | One | | Used ten times in salads, etc. |
| Corn | Golden Bantam | 1 pt. | 20c | 20 | Four | 213 ears | "I'm satisfied" |
| Lettuce | Big Boston | 1 pkt. | 10c | 9 | Three | 19 baskets* | |
| Mint | | | | | | | Used nine times for sauces. Supply never exhausted |
| Onion | Potato White sets | 3 pts. | 40c | 10 | Two | 361 onions | Like the potato sets *so* much |
| Parsley | Moss Curled | | | 2 | One | 17 bunches | Supply is never exhausted |
| Peas | Nott's Excelsior | 1 pt. | 25c | 15 | Three | 9 qts. | I know a more satisfactory |
| Peppers | Sweet, Bull Nose | 1 doz. | 10c | 1 | One | 36 | Till frost |
| Potatoes | Green Mountain | 1 qt. | 10c | 7 | One | 10 qts. | My first trial. |
| Radishes | Scarlet Globe | 2 pkts. | 10c | 6 | Three | 35 bunches | |
| Rhubarb | Linnæus | 2 plants | | | | | In fine shape for next season. None picked owing to transplanting. |
| Spinach | Long Season | 1 oz. | 10c | 7 | Two | 4 baskets† | |
| Swiss chard | | 1 oz. | 10c | 11 | Two | 17 baskets† | Picked till frost |
| Tomatoes | Acme, Ponderosa, Dwarf | 32 plants | 50c | 10 | One | 152 lbs. red<br>35 lbs. green | Till frost. |

*These baskets were large grape baskets

†Large peach baskets

Only 687 square feet, yet the garden gave all the vegetables needed by a family of three fat tomatoes, all the way up the plant. There were plenty of radishes, baskets of lettuce, spinach, and Swiss chard, and notwithstanding several disappointments, the garden thrived and proved a source of profit, economy and much pleasure. The last to be planted were rows and rows of the Refugee bean, with occasional rows of Swiss chard. The surplus of the vegetables gathered was canned for the winter, and the shelves of the cellar had jars of beans, tomatoes, sauces, and relishes.

You don't know what really sweet corn is unless you have gathered and at once cooked it

Could more have been done with 687 square feet of ground?

Much of my time has been devoted to the gardening early in the morning or late afternoon. Nor did I neglect the flowers, and a fresh bouquet was gathered every morning.

Here is a tabulated statement of the details:

| | PAID FOR | |
|---|---|---|
| Seeds | | |
| Peas, 1 pt. | $.25 | |
| Onion sets, 1 qt. | .25 | |
| Onion sets, 1 pt. | .15 | |
| Spinach, 1 oz. | .10 | |
| Swiss chard, 1 oz. | .10 | |
| Corn, 1 qt. | .35 | |
| Beans, 3 pts. | .53 | |
| Beans, 1 pt. | .15 | |
| Lima beans, 1 qt. | .40 | |
| Radishes, 2 pkts. | .10 | |
| Lettuce, 2 pkts. | .20 | |
| Potatoes, 1 qt. | .10 | |
| | | $2.68 |
| Plants | | |
| 1 doz. Acme tomatoes | $.25 | |
| 6 Ponderosa tomatoes | .15 | |
| 6 dwarf tomatoes | .10 | |
| 1 doz. cabbage | .10 | |
| 1 doz. pepper | .10 | |
| 25 celery | .15 | |
| Chives | .10 | |
| | | $ .95 |
| Manure | | 2.50 |
| Help | | .50 |
| Insecticide | | .60 |
| | | $7.23 |

And I have left over seeds to the value of more than half a dollar.

# Why and How to Spray Now

## By E. L. D. Seymour, New York

WINTER spraying is worth while for three good reasons: convenience, economy, and effectiveness. It is a convenient practice because between October and April other farm and garden work is at a standstill and because the trees, having shed their leaves, can be more easily covered with the spray mixture; economical, because it involves the use of but one, or at most, two kinds or sprays, namely, lime-sulphur and oil preparations; effective, because lime and sulphur, if thoroughly applied, is a certain destroyer of the peach leaf curl fungus, the oyster shell scale, and the San Jose scale — that second most injurious pest of our fruit trees.

If you have a dozen or twenty trees — half an acre or less in all — you need only a knapsack sprayer costing from three to ten dollars, according to the type. If you have as many as five acres of trees, you can well afford a twenty or twenty-five dollar barrel outfit mounted on wheels or a sled. If you have ten acres in fruit and possibly more to come, buy a power sprayer.

Integral parts of any outfit are good nozzles (the Vermorel and Mystery, Jr., types give excellent, fine sprays); sufficient hose to permit work around the trees; and protection for the sprayer and team, if you use one. Thick gloves, well treated with oil, and overalls are essentials.

Lime and sulphur is *the* dormant spray. Others are merely different ways of trying for the same results. The various oil preparations are perhaps a little pleasanter to use; in fact, for the home garden, they are, after all, the most convenient, but for a thorough clean-up nothing beats the sulphur mixture. If you use use the small outfits mentioned above you had better buy the prepared concentrated lime and sulphur mixture and avoid all the bother of home mixing. This preparation and the prepared miscible oils all cost a little more, but by using them you can economize on time and energy, which are the true measure by which to judge values.

But if you have to use three or four hundred gallons of spray you will save by making the material at home. A good sized apple tree will use four gallons, and even a peach tree will require two or more.

There are a number of formulæ for making lime and sulphur, but undoubtedly the best gives a concentrated solution as follows: Eighty pounds clean lump lime, forty pounds flowers of sulphur, fifty gallons of water. Ordinarily, this mixture will make the final spray cost about nine-tenths of a cent per gallon. Commercial mixtures come to about one and three-quarters cents per gallon — a negligible difference on a small scale.

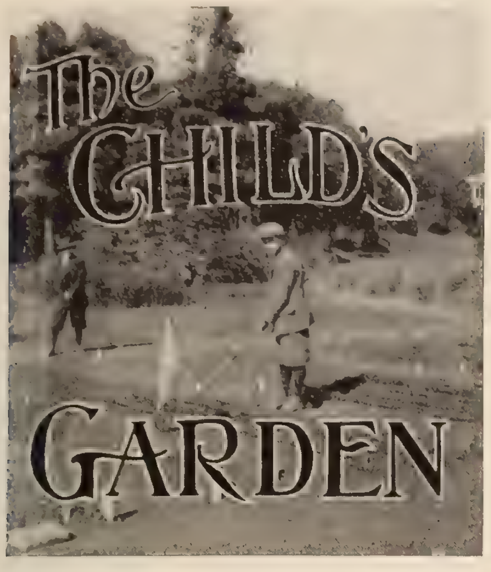
For making the mixture at home, a cooking outfit is necessary. This can be bought for from ten to forty dollars, the latter amount providing a steam cooking outfit which really gives the best results. However, an ordinary feed cooker can be used provided it gives room for the boiling up of the material. The process of making lime and sulphur is not difficult. Put ten gallons of water in the boiler and start the fire. Add the lime, and as soon as slaking begins vigorously, add the dry sulphur, stirring thoroughly meanwhile. Unless the sulphur is of very good quality, it will be well to strain it. Boil this mixture for about an hour, adding sufficient water to keep the final mixture at fifty gallons. If steam is used, this addition will not be necessary. Stir occasionally in order to prevent the accumulation of sediment on the sides of the tank. If correctly made, the preparation should become a brilliant orange color; the cooking is completed when all the sulphur is seen to go into solution. The material may be used at once, being poured or strained into the spray tank, or it may be stored in air-tight receptacles indefinitely.

Commercial concentrated lime and sulphur should be diluted about ten times. The only way to get accurate results with the homemade mixture is to test it with a hydrometer. This instrument, consisting of a graduated tube and an enlarged weighted base, can be bought of any firm that supplies chemical apparatus. The mixture should be placed in a vessel deep enough to permit the sinking of the hydrometer as far as it will go.

The degree on the long, narrow neck to which the liquid rises should then be read, and recorded. Hydrometers are marked in one or both of two ways, viz., the specific gravity or the Beaumé scale. The former is by far the more convenient for this work, although reduction tables combining the two scales can be obtained when the hydrometer is bought.

To get the correct degree of dilution, divide the fraction of the amount recorded as above by the specific gravity of the final spray mixture desired. This will give the number of dilutions necessary. For instance, if the concentrated mixture tests 1.24 and we desire to spray with a mixture testing 1.03, we have the following: $\frac{.24}{.03} = 8$, i. e., the addition of *seven* volumes of water will be necessary.

The strength of the spray mixture is determined by the use for which it is desired. Specific gravities of 1.03 and 1.04 mark the usual strengths for dormant spraying for San Jose scale; on peach and plum trees and other tender species, the specific gravity should not be higher than 1.02 to 1.01. An additional advantage of this concentrated mixture is that it can be used for summer spraying if diluted to a specific gravity of 1.003. It is not essential that the commercial mixtures be tested, but it is certainly advisable where the hydrometer is available.



## School Gardens in Massachusetts

THE school garden movement was started in Massachusetts by Principal Clapp of the George Putnam School, Boston. Mr. Clapp had been one of the leaders in the teaching of nature study and in trying to make this nature study more real. He encouraged his pupils to bring ferns and wildflowers from the woods and plant them in fence corners of the city school yard.

Later, as the interest increased, this garden of wild plants was supplemented by a vegetable and flower garden. I speak here of the way in which Mr. Clapp introduced his garden work because it is in many ways typical of the manner in which gardens have been introduced into our Massachusetts schools.

Usually these gardens were started first in city schools, spreading later to village and country schools. They have been most popular under city conditions though I believe that they have been most productive of good in the country.

Little by little the school garden had been making its way but in 1907 its status in Massachusetts seemed to many educational leaders of the state to be still somewhat uncertain. It appeared to some of the friends of the school garden that the time for such uncertainty had passed. We, therefore, planned a school garden meeting to be held in Tremont Temple, Boston, on February 15, 1907. The foreword of the programme was as follows:

"Many superintendents of the state have expressed their belief in the school garden movement and their desire for suggestions as to how to conduct such school gardens. This meeting has been planned with the idea of bringing together those who have had experience, and those who have had none, for full and free discussion.

"The topics for discussion were as follows: 1. The school garden in the village. 2. The school garden in the city. 3. The school garden in the country. 4. Children's home gardens."

The plans for the meeting were consistently carried out and the results were about what was expected. From that day there has been no question regarding the standing of the school garden as a desirable form of school activity.

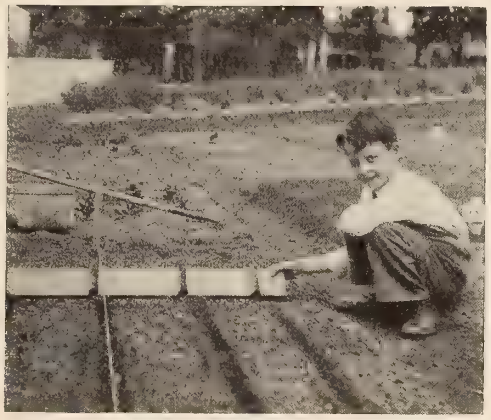
The present status of the school garden in Massachusetts, judging from letters recently received from a variety of people in different parts of the state, seems about as follows:

1. Whereas ten years ago only one normal school in the state was doing such work at present every normal school but one is training its pupils in school garden work.

2. In many cities and towns the work is getting on to a more rational basis and less showy but more substantial work is being done.

3. In a few places the work has proved disappointing and has given place to something else.

4. The state authorities are encouraging the establishment of a few agricultural high schools and of departments of agriculture and horticulture in high schools. Only a few have yet been established and the whole matter is in the experimental stage.


A garden marker insures straight drills: it also saves time when marking out many beds. Easily made at home

5. Considerable enthusiasm is being aroused by the establishment of corn and potato clubs which receive their encouragement from the Amherst Agricultural College.

6. Much is being done by way of prizes for exhibits of the products of children's school and home gardens offered by the State Horticultural Association, by county agricultural fairs and by local organizations of citizens and women's clubs.

The school garden movement has taken many forms such as the improvement of the school grounds, the cultivation of ground on or near the school grounds for flowers, vegetables, bulbs or vines, the care of home gardens, the improvement of home lawns, the establishment of courses of agriculture including horticulture and poultry raising, the establishment of corn clubs and potato clubs.

There is a strong sentiment in Massachusetts against the trade school type for children in the grades. It is not, therefore, our purpose to teach school garden work for the sake of making farmers. We aim rather to so enlarge and enrich the experiences of the children, that their sympathies may be broadened, and they may become better citizens.

Hyannis, Mass. W. A. Baldwin,
*Principal State Normal School.*

## Garden Work for This Month

BOYS and girls require just the same directions and rules for seed planting as their fathers and mothers receive. Because of this I wish you would read this month's issue of the magazine right through. It is just cram full of things you wish to know. There are three articles which will be of special interest to children who garden. One article is about starting vegetable seed indoors. The other two articles are on the art of sowing flower seeds. One of these is written by H. S. Adams, the other by Parker Thayer Barnes. Also look on page 83 and study the vegetable planting table.

It seems to me that after a boy or girl has planted annuals for a season or two the next step should be to work into the garden some perennial plants.

Perennials may be sown in August and the next garden season they will spring up and blossom. Or they may be started in boxes or in hotbeds now and transplanted into the garden later in the season. One of the loveliest of perennials is the delphinium or larkspur. Phlox, snapdragon, columbine, carnation, forget-me-not, pansy, pentstemon, petunia, and verbena are all perennials.

Such perennials and biennials as verbenas, Chinese pink, pentstemons and pansies are often started indoors very early under glass.

Certain seeds may well be started indoors at the present time. Celery, tomatoes, cucumbers, kohlrabi, radishes, lettuce, and peppers may all be started indoors. Try larkspur, asters, pansy, zinnia, sweet alyssum and petunia seeds in flats or under glass. Usually about the middle of March sweet pea seeds may be planted outdoors.

The Hyannis Normal School garden at planting time. The students work with the children

Readers' Experience Club

(Editor's Note.—*We want to know how successful workers do things in order to put actual experiences before our thousands of readers in all parts of the country. Every reader is invited to contribute a short note on some interesting experience. Just state the facts about some ingenious idea that you have actually worked out yourself or have seen.*)

### A planting idea

For the last eight or ten years I have planned my garden a month or two before planting time, and to economize and make the very most of my space I have followed this plan: I plant on one side of my garden seeds that require the greater part of summer in which to grow and mature, such as beets, parsnips, parsley, etc. Quick-growing crops, such as lettuce, radish and onion sets, I plant side by side and follow with cucumbers, tomatoes, etc. When I plant the larger crops — melons, potatoes, etc.— I make the rows three feet apart and use every other row for the vine crops. The same plan works well with sweet corn and squashes or pumpkins. —J. G. J., Ohio.

### Sprouting dahlias

Last spring was my first year of planting dahlias. I let the tubers sprout before planting, then separated, and planted two or three to a hill, first cutting off sprouts. The soil, which originally was a stiff red clay, had been fertilized the fall before with cow manure and another dressing of well rotted manure was worked into the soil in April. The tubers went into the ground on May 1st. I dug a large hole, filled it with water, set in the tubers and covered them with about four inches of soil. I watered regularly the first two weeks. On June 2d the first shoot made its appearance and by July 6th I had fine plants covered with immense yellow dahlias. I did not stake the plants nor prune them; they were covered with blooms until frost killed them. When I dug up the plants last fall there were from ten to fifteen tubers in each bunch.— N. Z. F., North Carolina.

### Gladiolus and poppies

For the last two years I have tried planting gladiolus around my Oriental poppies. If two successive plantings are made the gladiolus may be had in bloom quite late. I plant the bulbs the first thing in May, before the poppies have made a very large spring growth. In the middle of June, or later, when the poppies have ceased flowering, I cut the plants, leaves and all, back to the ground. Then the gladiolus can have plenty of sunshine. Last spring, in planting the bulbs, I found that I had not dug up the old ones the fall before. They had lived through the winter and had made considerable growth by the middle of May.— S. T. H., New York.

### Rugosa roses for hedges

In a recent number some one complained of the rugosa rose being straggly. It is not so in my garden; I have a large hedge of a number of kinds, which is trimmed down about a fourth every March. The plants are bushy from the ground up, a mass of bloom in June and a great deal of bloom all the rest of the summer. The June sprays are cut off. Blanc Double de Coubert is the most prolific bloomer and best shape.— Mrs. D. P. L., Wisconsin.

### After the bulbs flower

The leaves of daffodils are a nuisance after the flowers fade, if the bulbs are in a border awaiting other plants. I either tie the leaves in a loose knot close to the ground, or fasten them into compact bundles with raffia, so they will fall into one place and not interfere with other plants. Tuberous begonias are fine for following daffodils. I sprout them in pots or boxes and set them out as soon as the daffodils begin to die down.— F. H., Illinois.

### Saving space

Planting time for tender annuals last season found us in temporary quarters in which two kitchen windows — one on the east side and the other south — were the only ones available for my "flats." With care this was sufficient space until the seedlings were large enough to be promoted to separate pots. The following scheme for saving space was a great success. I set the pots in boxes as deep as the pots were high, after putting drainage in the bottom of the flat and the pots. I then filled box and pots level full — but lightly — with fine potting soil. The seedlings were transplanted into the pots and into the spaces (even the triangular outside ones) between the pots. When it came time to set out the plants the pots were lifted and emptied first, and the remaining plants were standing in clods of earth as firm and as easy to handle as the balls from the pots. But — the plants grown between the pots, having had so much more room for their roots on account of the tapering down of the pots, were without exception bigger and stronger than their pot-grown brethren. It may not be a new idea to cover the flats as soon as the seeds are sown, with sphagnum moss. By keeping this sprinkled the soil had no chance to dry out and the moss was a protection against washing. It was removed, of course, as soon as the seedlings appeared.—C. P. B., New Jersey.

### New potatoes on May 18th

Last year I had new potatoes ready for use on May 18th, from seed planted in March. I bought one peck of Early Rose potatoes, cut them in pieces, leaving two or three eyes in each piece. I had prepared a small coldframe, putting in it only a moderate quantity of well-rotted stable manure, with four or five inches of garden soil covering it. In this frame, on March 3, I put the whole peck of potatoes, laying them close together and covering with a glass frame. I let them stay until they were well sprouted and then transplanted them into the garden in three rows, each forty feet long. Fortunately they escaped frost and grew rapidly; on May 18th we began using them for the table, and they supplied a family of five until the later crop had matured.— M. F., Maryland.

### Fragrant shrubs

In a late number of The Garden Magazine a writer names the sweet brier as the most fragrant shrub of his section — the New England States. And I agree with him. In my little California garden I brush against the orange, lemon, walnut, lavender, sweet bay, and the choysia, with its pungent odor, with a keen appreciation of each and all. But down in a corner of the garden is a clump of Scotch sweet brier; and I know that if I had to choose only one fragrant thing for my garden it would be this plant. In my opinion nothing else that grows is so perfectly satisfying. My impression is that it is universally hardy, and I have seen it growing along country roadsides in ground as hard as flint. Yet it is seldom that one comes across it in gardens, at least in this section, and it is rarely mentioned in garden publications. The variety known as Scotch Brier is, in cultivation, a strong, tall grower and soon spreads into a clump.— S. E., California.

### Poppies for the bulb beds

I have a bed of narcissus and tulips 2 x 15 ft. When it was in full glory last year I lightly scattered over it Shirley poppy seed; the poppies began to bloom in June and bloomed profusely. The roots did not go deep enough to injure the bulbs left in the ground. As every one knows who likes Shirley poppies and has observed them, the new blooms open about an hour after sunrise. To keep the bed blooming it must not be allowed to go to seed. So cut all the flowers at once — there will be plenty more the next morning. The Shirley poppy self sows; the spring after the seed is sown the bed will be so full of plants that they will have to be thinned. Give each plant a square foot (or a foot square) and it will show a score of blooms. In the fall sprinkle a little strawy manure over the bed which must be raked off before the plants start in the spring. In this way one can have beautiful poppies four inches in diameter. — H. C., New York.

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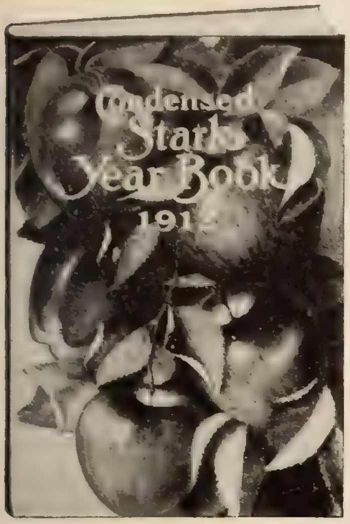

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This department is in charge of experts in tree-planting and fruit culture. These men have a wealth of information at their command — their training and long experience amply qualify them to counsel with you on any tree problem you may put up to them. Their time is yours, free for the asking. They will dig into your problems with eagerness. And they will not rest until they have found the exact information you need.

The greatest assistance these experts can render is in helping you to get started right in the beginning. You know that an "ounce of prevention is worth a pound of cure." Why not, then, get in touch with us now on your planting plans for next spring?

### How About Your Home Grounds

Is your lawn or your garden as beautiful as it should be? Does its restful beauty entice you to it after the busy, nerve-racking day at the office, or the fatiguing round of social duties?

You can make it such a spot easily, quickly, and at small cost.

You do not need the services of a landscape architect or gardener. Without charge our Special Service Department will advise with you, help you, direct you. By using this service you can get the greatest results at the least cost.

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The only short cut to profit success in fruit growing or home-ground-planting is good varieties, correct methods of planting and good care. It costs no more to plant the best varieties of fruit trees or the most beautiful ornamentals than the poorest. But what a difference there is in profits and in beauty?

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It is not too early to make your plans for spring planting. Putting it off until spring opens is one of the most common and most costly mistakes. Start now; get your plans settled, varieties selected, and your order placed. Early ordering means the choicest stock, delivered at just the right time for planting.

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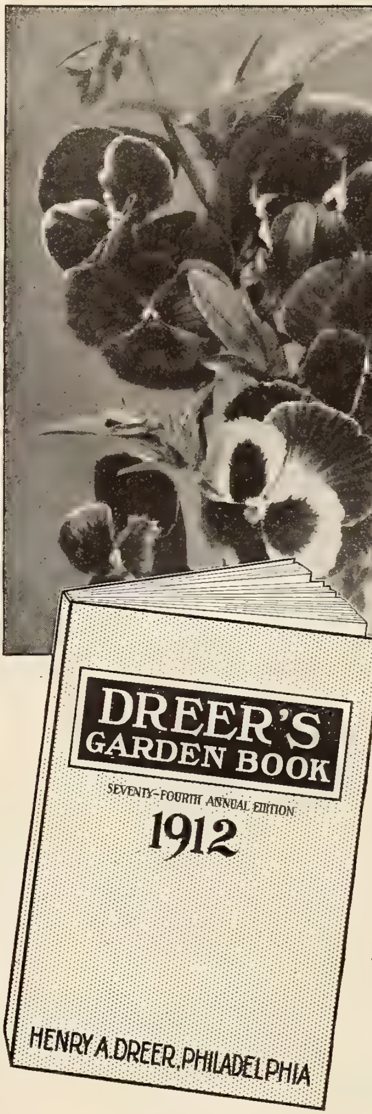

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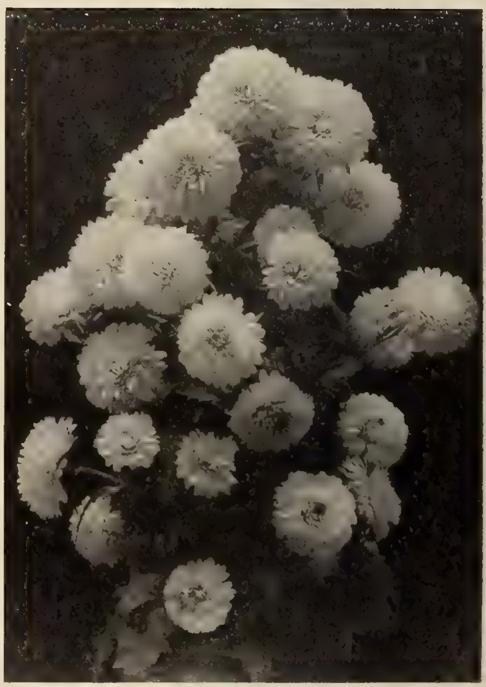
## Some Asters Worth Growing

WITHOUT exaggeration there are hundreds of names for aster varieties in the trade to-day. Now all these are not different from each other and in a great many cases where differences do exist they are so minute that they are hardly worth while considering. Each grower has introduced a great many of his own varieties under his own names and they more or less parallel introductions of other people. At the same time there are distinct types and well recognized varieties in those types that are standards and in the selection that I now give I have followed very largely my own judgments from the experience of a good many years with all the varieties of the principal types; but I believe these include all those that are really most worth growing. The main groups and divisions of the China aster family are given on page 83 of this number of The Garden Magazine.

In the present place I consider the varieties in their period of flowering. The earliest to flower are the Express Comet varieties. All the Comet types have extremely elegant and graceful flowers of large size, resembling the feathery Japanese chrysanthemum. The height of this variety averages about twelve to fifteen inches.

The next in season of blooming is Queen of the Market, of spreading habit and very free flowering, the flattish shaped flowers being of good size and produced on long stems, excellent for cut flower purposes. Following these are the beautiful American raised Comet-like varieties White Fleece and Lavender Gem, the former having a very branching habit and light feathery blossoms which often average five inches in diameter. They grow about eighteen inches high.


A single plant of the Daybreak type of Globe aster (Pink Beauty), showing the great profusion of bloom

Following these in season come the beautiful Daybreak, or Purity class, also Truffaut's Paeony-flowered Perfection, and Victoria. The Daybreak type is of American origin and now includes a number of very fine varieties, the plants being of upright and bushy growth, averaging eighteen inches in height and so free flowering that the plants become perfectly smothered with flowers two and one half to three inches in diameter, which have broad, smooth petals slightly incurved. Among the best of these are Daybreak a very pale pink; Purity, pure white; Pink Beauty, soft shell pink; Lavender Daybreak, pale lavender; Sunset, bright pink; Salmon King, rich salmon-pink; and Lemon Drop (Yellow Daybreak), lemon approaching yellow.

The Victoria and Paeony-flowered types growing eighteen inches high, are also of upright habit,

# I Measure Rose Value Not Alone By The Size of The Plant, But By Its Vitality

*Size* alone, in a rose plant, counts for little. It may be forced into a spindling growth, but if so, it will either die when planted in your garden, or else dwindle along until you have lost all patience with it.

The *successful* Rose — the one that adapts itself to whatever conditions it is transplanted into — must have *within it* what I call "plant character"— a rugged, sturdy vitality that comes from careful and intelligent breeding. The plant that *you* get must be right, and it must be propagated from a long line of other plants that are right, too.

Now, there are only a few places where such roses as these can be started successfully — and I am located in one of them.

## Why This Section is Ideal For Rose Culture

We have a splendid climate for rose-growing. Fairly warm summers, winters cold enough to check all growth, and making it easy to transplant them anywhere. But we have *a very long growing season.* That enables me to put more growth and vitality into a plant of given size, than is possible for growers in colder climates, though my plants are as hardy as any. You can prove by comparison that one of my Fairfax Roses in two or three-year size is larger and better-developed than one produced where the growing season is shorter.

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No plant is *forced*, but it is made to develop *steadily* and *permanently*. My first aim is to make plants with stocky root-systems; with that there comes a thrifty cane-growth, which expert pruning develops into a good *blooming* top. That's why my Fairfax Roses come to you ready to begin blooming.

## I Am Growing Nearly 150 Varieties of Roses

— all leading groups and classes. Every variety is *reliable* — I investigate new introductions and prove them worthy before recommending them. My customers in every state in the Union, and in many foreign countries, have learned to depend absolutely on the quality of my Fairfax plants. They know they cannot get Roses from me that I am not reasonably sure will succeed for them. I personally supervise the filling of orders.

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# Set Your Home Among Evergreens

If you were building a new house and had two sites equally desirable, except that one was bare of trees or shrubs while on the other the space for the buildings was sheltered by evergreen windbreaks, shaded with maples and oaks and elms, made homelike and attractive with spruces and firs and other conifers, and given a touch of bright beauty by shrubs and vines and roses — wouldn't you much prefer the latter?

## Where You'd Get Your Returns

It's the experience of everyone who tries to buy well planted properties that they usually have to pay almost as much for the planting as for the buildings, when such homes are for sale. The best work is done, the greatest prosperity enjoyed and the happiest lives lived in the attractive homes — because home conditions have a great influence on efficiency and enjoyment.

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If some kind relative, living on a mid-Western farm, cured his own hams and bacon in a smoke house and rendered his lard in a big open kettle over a wood fire and supplied you with these things, you would know what few but farmers ever know, the rare flavor of genuine farm products.

For those who own no farm and have no such relative, we cure every year a few select small hams and sides of bacon and rend a very fine, dry lard.

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Your grocer should be glad to order Jones hams, bacon or lard for you. If he hesitates drop us a line and get our little booklet. When we send it we'll write you a letter explaining how we will fill your order direct.

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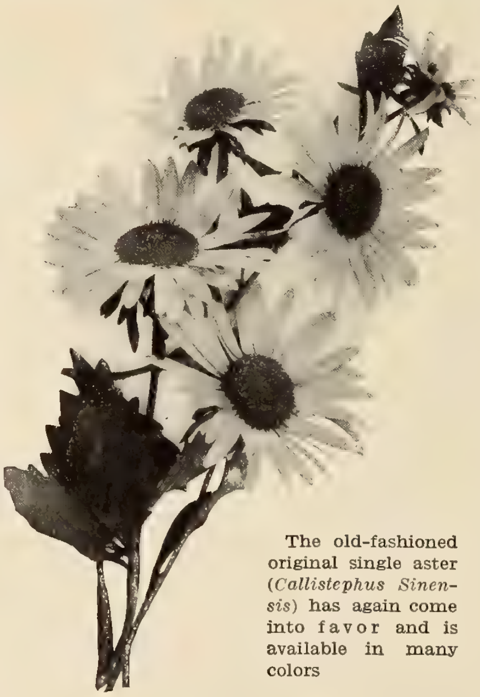
the former having large, flat, slightly recurving flowers with broad flat petals, the flowers of the latter being incurved which, when well grown, form into almost perfect globes. The upright branching varieties somewhat resemble the Victoria aster in habit but make a taller growth. The Crego type, which originated in America, will, when its beauty and merit become known, be grown by everyone who plants asters. The flowers often measure over five inches in diameter, are borne on long, stout stems, are thoroughly double and of feathery, Comet-like, artistic form. The plant grows two to two and one half feet in height, with a graceful branching habit.

The American Late Branching types are undoubtedly the most popular asters of to-day, these being offered under such names as Semple's Branching, Invincible Branching, Carlson's, etc. The plants attain a height of from two to three feet according to soil and climate; their habit is strong and branching, the flowers being thoroughly double, very large, often over five inches in diameter, and are unsurpassed for cutting. In this class Mary Semple (soft shell pink), is the favorite, but the white, rose, pink, crimson, lavender and blue varieties are all excellent.


The old-fashioned original single aster (*Callistephus Sinensis*) has again come into favor and is available in many colors

Violet King, another variety of a late branching type, is similar to the foregoing in habit, height and free flowering qualities but the flowers are quite distinct, the petals being narrow and partly quilled, the color being a pleasing shade of violet.

Rochester, a variety of Mikado, might be termed a very fine form of branching type of Comet; it is also of American origin. The plants run about eighteen inches in height, the flowers being very large, the petals beautifully twisted and curled, and the color a beautiful soft shade of lavender-pink.

The variety Electric marks quite a departure in this family, the petals being long, very narrow and almost thread-like, the color pure white. The flowers average four inches across, the plant attaining a height of fifteen inches.

A new and distinct type of bedding aster is found in Waldersee, although it is valueless for cutting purposes. The plants are very dwarf, averaging a height of six to eight inches and become a perfect mass of flowers, which last for quite an extended period.

Other fine bedding varieties are the Dwarf Queen and Dwarf Chrysanthemum-flowered. The old German Quilled aster is rapidly losing favor, no doubt on account of its stiff and formal shaped flowers. On the other hand the oldest type (Sinensis), the single flowered, is gaining in popularity. It has been greatly improved of late years, and many charming colors may now be obtained.

Although the dwarf forms are primarily of use only for bedding, the tall varieties also can be used

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the magazine for the man or woman who wants to make the most of the home whether there is little or much to spend. *House & Garden* brings you into homes whose owners have planned them with wonderful ingenuity and individual taste, it shows distinctive decorative effects, portrays successful gardens and beautiful landscape results and, best of all, tells you just how to secure each one of these things and at what expense, while a profusion of actual photographs aid in planning the many details that insure a home of individuality. On receipt of 25c (regular price) and the names and addresses of only 15 people whom you know to be actively interested in housebuilding or gardening, we will send you March *House & Garden* and also *Inexpensive Homes of Individuality* FREE. Your name will not be used in connection with the list. Do it now while you think of it.

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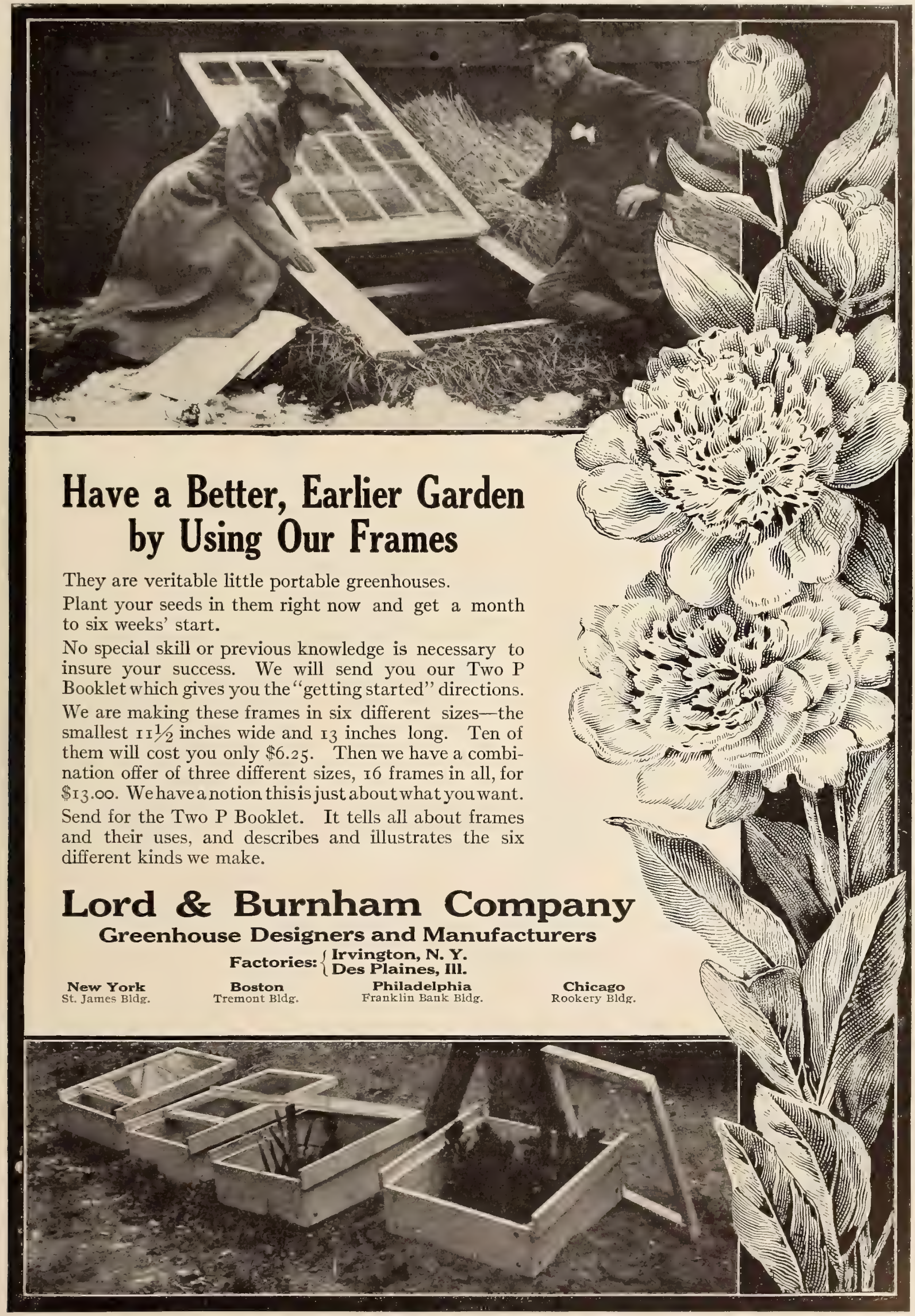

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**Insect Pest Destroyer!**

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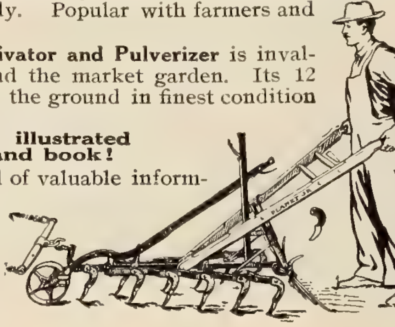

for that purpose with telling effect. In exposed positions, as on open lawns which are apt to be wind swept, the bedding varieties ought to be used. The Crego, Semple's Branching and Mikado types make splendid dot plants for the herbaceous border.

The Express Comet varieties, which are the earliest of all, if started under glass in March, will bloom early in July; sown outdoors in May they will bear flowers at the end of July. Queen of the Market started indoors at that time will bloom the middle of July; sown outdoors, early in August.

White Fleece and Lavender Gem, started indoors, will bloom in early August, and toward the end of the month if the seed is sown outdoors.

Paeony-flowered, Victoria, Daybreak or Purity class, and Electric will bloom the middle of August from seed sown indoors in March; outdoors, early in September.

Tall Branching, Crego, Rochester or Mikado, Waldersee, and the Single blossom from the middle to the end of August if the seed is started under glass in March, and from early September onward from seed sown outdoors during May.

Pennsylvania. G. W. KERR.

## As to Double Primroses

I CARE little for double flowers as a rule and even have been wont to look with pity on those who would double the primrose. But I confess that I have had to back water since I have come to be the owner of a double white primrose. In May, 1909, I purchased one plant of *Primula acaulis alba plena*, just to show how right I was, and got my first blossoms a year later. The May following found the plant the daintiest imaginable cushion of soft green studded with more than fifty beautiful white flowers as double as double could be and — I was converted on the spot. So long as I have a garden there shall be a place for this charming flower, which is admirably placed near the yellow of my *P. vulgaris* and the mauve of what I bought for *P. Cashmeriana* but I believe is *P. denticulata*. I have another double primrose that doesn't know whether it is rose or magenta and has a way of getting along with just enough petals to keep it out of the single class. Though I hate to throw it away, it is scarcely worth garden room. The next time that I am in England I shall hunt for the famous old double red called Pompadour — it will come high, but I must have it to go with my white. I have found the double white primrose most easy of culture and inclined to form new crowns with a fair degree of rapidity. I give it full sunshine in spring but shade in summer. The soil must be well drained and the bed raised a few inches above the garden walk.

New Hampshire. L. C.

## The "Escaped" Bellflower

IT IS rather singular that the bellflower that probably has been longest in cultivation here is not only among the least familiar but is known to few by name. This is the European bellflower (*Campanula rapunculoides*), once a favorite in gardens but now seldom seen excepting as an "escape." In fact I can recall no garden other than my own where I could be sure of finding it, though I know of plenty of old dooryards where it still seeks a haven by a fence. Once in a while it is found straying out to the very roadside. We call it "bluebell" in New England. I think, however, that the old name was rampion. At any rate I can distinguish no difference between this and the *Campanula Rapunculus* whose roots are edible and which is much liked in France; where its name in the vernacular, *raiponce*, sounds so much like *réponse*, that *manger des raiponces* is used as a play on words. I have never eaten rampion, but I do like this time-honored bellflower that so long has been an outcast. It is an excellent border plant, if kept within bounds, and by not allowing it to go to seed one may be sure of its graceful spikes of purplish blue blossoms through the summer and into October; it is a most persistent bloomer. An excellent place for it to grow unrestrained is by a wall and nowhere does it look better; or it may be naturalized, either in full sunshine or partial shade.

New York. H. S. A.

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Privet will last as long as you need fences. May be grown any height — thick enough to turn sparrows, strong enough to hold hogs or horses. Trimming once a year (costing $2 a mile) is all the repairing needed. Live fences cost less than posts and wire or rails, and are much the best after the second year. Around the house the hedge may be high for screens, or low to avoid cutting off the view

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# In Search of Arcady

## By Nina Wilcox Putnam

FROM the moment of the arrival of Cecil Fitz-Williams, Earl of Chamboyne, in America, under the guidance of Lady Hylliary, the best-laid plans for the capture of an American heiress seem to go persistently awry. Truth to tell, the young Earl is somewhat ashamed of being fired headlong at Miss Barbara Chichester, heiress, and sidesteps the matrimonial issue by going off to visit an old college chum in Massachusetts.

It is in the open country of New England tha a very romantic little tale unravels itself, for the young Scotchman quite loses his heart to Lolli Plashta, a gypsy, and the proprietress of one of the quaintest little travelling carts that dispenses millinery and notions to the New England countryside.

How the Earl, in quest of Arcady, becomes an itinerant vendor of summer cottage furniture and how the search leads him into the picturesque gypsy camps makes a very enjoyable story.

*Four illustrations in black and white and tint by J. Scott Williams*

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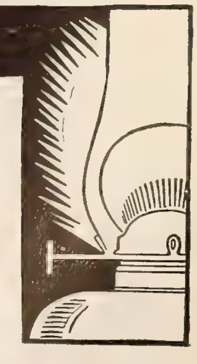

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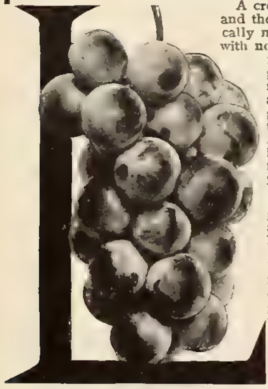

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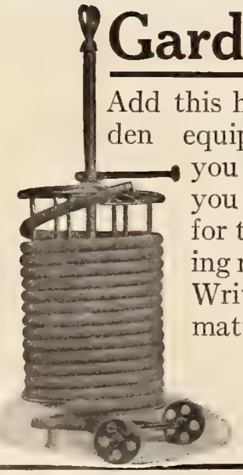

KILLING
the
BUGS

## Our Enemy, the Cutworm

LAST year became famous for its cutworms — never before have they been so destructive; let us hope for a better fate this year.

There was a time when we recognized but a single kind of cutworm. To-day most entomologists and some gardeners realize that there are close to fifty distinct kinds! Thirty named species at least infest the state of New York alone, and there are as many more caterpillars that so closely resemble cutworms in habits and appearance that for all practical purposes they, too, may be included.

However distinct these are in some respects, they are closely related to the following extent: They are all larvæ of certain moths of the family of "owlet moths" or Noctuidæ; they are all naked, dull black, brown, or gray, with various markings, which in some cases have given the groups their names, as the "yellow-headed," "dark-sided," "well-marked," "spotted-legged," and the like. They invariably eat during the night, hiding daytimes in the ground or under bits of wood, stones, etc. All are under an inch and three-quarters in length. The adult moths, too, are dull brown or rusty black; they fly mainly during the night, feeding upon the nectar in flowers. To many of us they are more familiar than the worms themselves, although we do not realize it, for practically all the "moth-millers" that flutter about our lamps on summer evenings, are noctuids, and the majority probably adult cutworms.

Now as to the differences between the various forms. In the matter of appearance these depend upon rather inconspicuous spots and lines as I have mentioned above. The appetites of all the species are satisfied with almost any sort of tender succulent plant tissue. But their habits and life histories differ considerably. Some gnaw through the stems of seedlings just at the surface of the ground; others half an inch above it; another "wise old owlet" cuts the stem and drags the severed end back into his burrow where he contentedly drinks the juices from the cut surface, safely out of reach of the gardener's roving eye; still other species have done much injury by climbing bushes and even trees, devouring leaf and blossom buds. However, it is now believed that any cutworm will exhibit this climbing habit in the absence of sufficient food on or near the ground.

The variation in the life histories of cutworms is the source of much inconvenience both in grouping and in fighting the species. Ordinarily the moths appear in June, July and August, during which months the eggs are laid. In some cases these hatch in a few days; in others, not for several weeks. Most forms spend the winter as half-grown larvæ in small earth cells; but several are known to hibernate as pupæ, the moths emerging in the spring; in yet another species the eggs are laid in the fall but do not hatch until the following spring; and in at least one case the mature moth lives all winter, laying her eggs, to the number of four or five hundred, early in May, or in April.

All these individualistic tendencies render the campaign against cutworms complicated and continuous. And yet it is perfectly possible to reduce the numbers of this pest and of its injuries to an insignificant minimum if we will but apply ourselves assiduously to the task.

Most cutworms, we note, are hatched during July and August when the gardens and fields are rich in food for them. Hence their depredations

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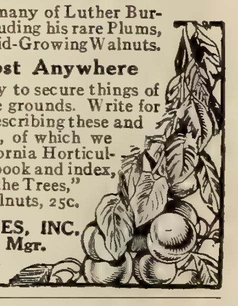

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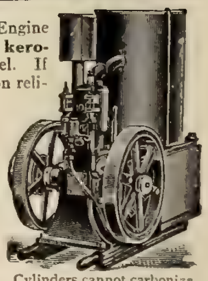

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By this same token, any "originality" we are able to infuse into the advertising suggestions, furnished free to our patrons, is due to the fresh light in which we see the products to be advertised. Our service is of value to the advertiser, because, figuratively, we are looking at his goods through the eyes of our readers; i. e., we go a shopping for them, not to buy, but to present in an attractive way the thing they may wish to buy.

Knowing our readers, we are equipped to tell what is interesting in a manner to prompt their attention.

If you are a new, old, or a prospective advertiser, little or big, in THE GARDEN MAGAZINE, and feel that our help will benefit you — it is yours for the asking.

Write, giving particulars and sending literature, etc., etc., to Jay Vee Lamberton, also known as

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**One Packet each of the following Giant Orchid-flowering**

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**New White Spencer.** Best White.
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**One Packet each of new Giant-flowering**

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**Dwarf Beauty.** Light Scarlet.
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**Tall Schulzi.** Scarlet.
**Tall Pearl.** Cream White.
**Tall King Theodore.** Scarlet Maroon; dark foliage.

**One Packet each of the following**

### ASTERS

**Violet King.** Beautiful Deep Violet.
**Early Snowdrift.** Earliest White.
**Improved Crego Pink.** Giant pure Shell Pink.
**Hohenzollern Rose.** Ostrich Plume Rose.
**Cardinal.** Beautiful Bedding Scarlet.
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**Remember** that for only **50 Cents** we will send you all the seeds mentioned in this advertisement **value $1.90.**

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**Start with the largest stock** that can be secured! It takes **over twenty years** to grow such Trees and Shrubs as we offer.

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WM. WARNER HARPER, Proprietor

The Home of Wholesome Food

Each Compartment a solid piece of Porcelain Ware, Like This.

A Germless Food Compartment

A Snow-White *Solid Porcelain Compartment*

It does away with cracks, joints, crevices, corners and other natural hiding places for dirt, odors, decaying food and dangerous microbes found in other refrigerators—the one *really sanitary* food compartment.

The "Monroe"

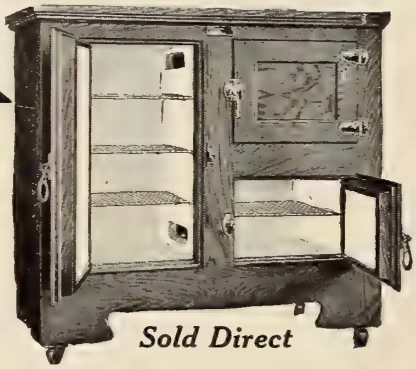
*A Lifetime Refrigerator*

**Send for Our Free Book on Home Refrigeration**

**It tells you how to keep your food sweet and wholesome—how to cut down ice bills—what to seek and what to avoid in buying *any* refrigerator. It is packed with money-saving hints, and every housewife and home owner should have one.** It tells all about the "MONROE"—describes its wonderful lining and the many other grand features that have given this refrigerator its position as the world's best.

**The "MONROE" is sold direct to you—at factory prices—on 30 days' trial. We pay the freight and guarantee "full satisfaction or money back."** ***Liberal Credit Terms if not convenient to pay cash.***

The "MONROE" is the **ONE REFRIGERATOR** with each food compartment made of a solid piece of unbreakable snow-white porcelain ware with every corner rounded as shown in above cut. The **ONE REFRIGERATOR** accepted in the best homes and leading hospitals. The **ONE REFRIGERATOR** that can be sterilized and made germlessly clean by simply wiping out with a damp cloth. The **ONE REFRIGERATOR** that will pay for itself many times over in a saving on ice bills, food waste and repairs. The **ONE REFRIGERATOR** with no single point neglected in its construction, and suitable to grace the most elaborate surroundings.



*Sold Direct*

MONROE REFRIGERATOR COMPANY
(15) Station 13, Lockland, Ohio

**Start a Fernery**

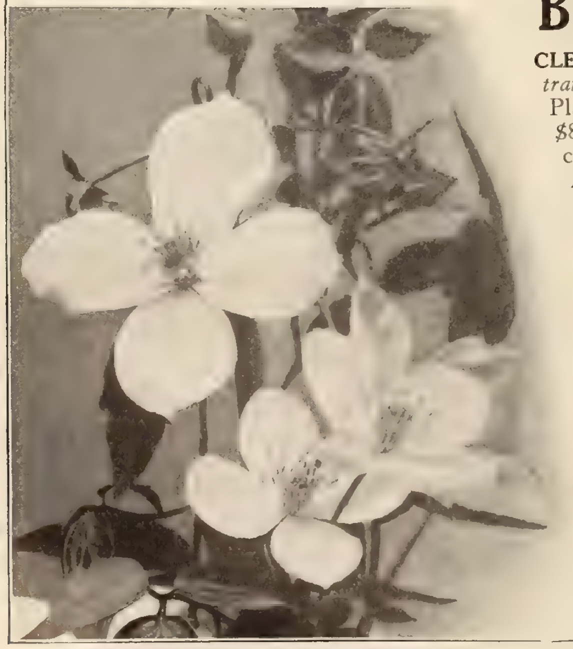
Brighten up the deep, shady nooks on your lawn, or that dark porch corner—just the places for our hardy wild ferns and wild flower collections. We have been growing them for 25 years and know what varieties are suited to your conditions. Tell us the kind of soil you have—light, sandy, clay—and we will advise you.

**Gillett's Ferns and Flowers**

will give the charm of nature to your yard. These include not only hardy wild ferns, but native orchids, and flowers for wet and swampy spots, rocky hillsides, and dry woods. We also grow such hardy flowers as primroses, campanulas digitalis, violets, hepaticas, trilliums, and wild flowers which require open sunlight as well as shade. If you want a bit of an old-time wildwood garden, with flowers just as nature grows them—send for our new catalogue and let us advise you what to select and how to succeed with them.

**EDWARD GILLETT, Box C, Southwick, Mass.**

NEW and RARE SHRUBS, VINES and BULBS from CHINA



**CLEMATIS MONTANA, rubens.** *See illustration.* New pink, summer-blooming climber. Plants from 3½ in. pots, each 75 cents; doz. $8.00. Plants from 2½ in. pots, each 50 cents; doz. $5.00.

**AMPELOPSIS THOMSONII.** Beautiful tricolor Woodbine, changing in the autumn to rich red. Plants from 3½ in. pots, each 75 cents; doz. $8.00. Plants from 2½ in. pots each 50 cents; doz. $5.00.

**LILIUM MYRIOPHYLLUM.** Blooms in July; flowers white suffused with pink, canary-yellow throat. Delightfully fragrant. Bulbs each $1.50; doz. $15.00.

**LILIUM SARGENTIAE.** Blooms in August. Enormous flowers, white shaded purple, fragrant. Bulbs each $1.50; doz. $15.00.

Do not fail to procure our Spring Catalogue which contains many new plants offered for the first time.

**R. & J. Farquhar & Co.**
**9 South Market St., Boston, Mass.**

are rarely noticed, especially since they find the weeds and grasses fully as desirable as the more mature garden crops. Therefore:

*Rule* 1.—Plow unused land in July if possible, or in August, and keep it in clean cultivation until the latest possible date when you can sow a winter cover crop. This will remove a vast amount of food and result in the starving of many young worms, besides destroying myriads of eggs laid upon grass stems, fallen leaves, etc.

In the spring, after a winter spent in a half grown state, the worms are ravenous; at this time, too, food is scarce until we set out tender lettuce, cabbage and tomato plants. Little wonder that they are attacked. Fortunately the worms prefer bran even to young seedlings. Therefore:

*Rule* 2.—Mix a pound of paris green or its equivalent of some arsenical poison with a bag of bran (or a tablespoonful to a quart), moisten the mixture slightly, and scatter a little around each newly set plant, *the same evening that it is transplanted*. This rule may be varied to the extent of using freshly cut clover soaked in or sprayed with a poison solution. The pith of the matter is, provide a poisoned bait.

In a garden devoted solely to vegetables this should suffice to save the crops from destruction. And yet, lest you tempt providence too far, sow your seed generously so that even if a few seedlings are taken you will not have to mourn a serious loss. If you grow fruit, especially peaches, and follow Rule 1, which removes much of the food of the young worms, those that survive the winter will probably attack your fruit buds before the vegetable season begins. Just when they are tenderest, the marauders will sneak up the trees about ten o'clock in the evening, feed and destroy until nearly dawn, then, taking a flying leap to the ground, will scurry to a hiding place just below the surface. To combat this manœuvre, practice

*Rule* 3.—Band each tree with some sticky substance that will not dry out, or wrap around it a strip of cheap cotton-batting about eight inches wide. (To make this most effective, wrap it with the smooth side out, and tie it tightly around the *bottom;* then pull the upper part down over the tied portion making a cone-shaped protector that maintains its shape for a long time, quickly drying out after rains.) Then scatter around the foot of each tree some of the poisoned bran. Events should proceed like this: Some of the worms will find the bran on their way to the tree and will refuse to go farther; these will be soon accounted for.

Others, more venturesome spirits, will climb, encounter the band and waste their obstinate energies trying to cross it. Now you can either smite them there, with a stick or a heavy glove, or you can leave them to eventually climb down in hungry disgust, find the bait and, literally, gorge themselves to death.

Oftentimes a satisfyingly large number of worms can be destroyed if you will take the trouble to dig around the base of each tree. The worms congregate within a foot of the trunk and rarely, if ever, more than an inch under the surface.

All this handwork and close application might become both tedious and expensive upon a large farm attacked by the pest. But in the small garden such methods easily become part of the daily routine.

New York. E. L. D. S.

## A New Insecticide

As a substitute for carbon bisulphide for fumigating plants, experiments have been made with carbon tetrachloride, a colorless, oily, and transparent fluid. It has a much less disagreeable odor than the bisulphide and also has the advantage of being nonexplosive. It is, therefore, perfectly safe for home use, although you will find it costs from three to four times more than the bisulphide.

Bulletin 96, Part IV., Bureau of Entomology, recently issued by the Department of Agriculture, is a summary of various interesting experiences with tetrachloride. In fumigating trees and shrubs, it killed scale and was found not very poisonous to the higher forms of animal life; in

**Guarantee Your Fruit Crop by Spraying**

It is practically impossible to raise perfect fruit without spraying thoroughly To spray properly you need the best spray pump made—one of the many

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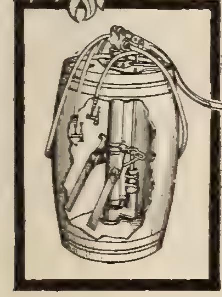
**SPRAYERS**

Every part is made to give long service and designed to give the best possible results in all spray work. Every requirement is met by the complete line, shown in our book,



**"How to Spray, When to Spray, Which Sprayer to Use"**

Send for a Copy. It contains valuable spray formulas.

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Send 10 cents in stamps (to pay return postage) and receive our **Revelation Box** containing 14 varieties of delicious Sunshine Biscuits.

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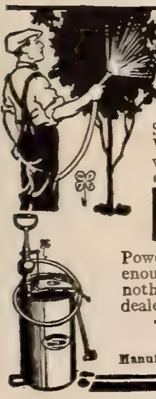
**YOU FIND MANY USES FOR THIS SPRAY PUMP**



Spray trees and vines, roses and garden plants. White-wash fences and poultry-houses, wash windows and walks, put out fires, and so on—every now and then, you find new uses for the

**Deming** Perfect Success

Powerful enough to cover quite tall trees, small enough to carry by one hand. Nearly all brass; nothing to rust out. Many other styles; ask your dealer or write us for catalogue.

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Manufacturers of Pumps For All Uses. Agencies Everywhere

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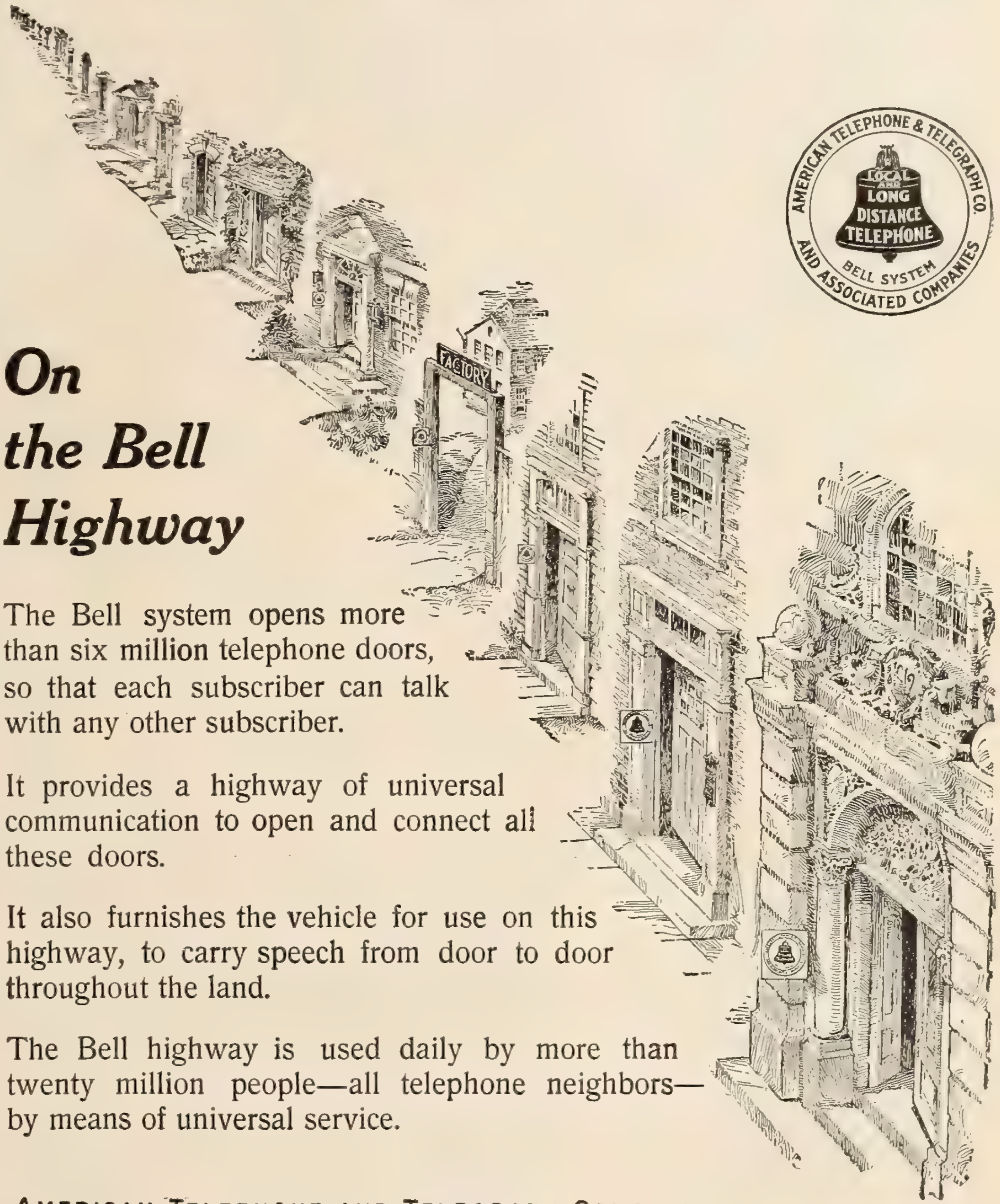
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AMERICAN TELEPHONE & TELEGRAPH CO.
LOCAL AND LONG DISTANCE TELEPHONE
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***On the Bell Highway***

The Bell system opens more than six million telephone doors, so that each subscriber can talk with any other subscriber.

It provides a highway of universal communication to open and connect all these doors.

It also furnishes the vehicle for use on this highway, to carry speech from door to door throughout the land.

The Bell highway is used daily by more than twenty million people—all telephone neighbors—by means of universal service.

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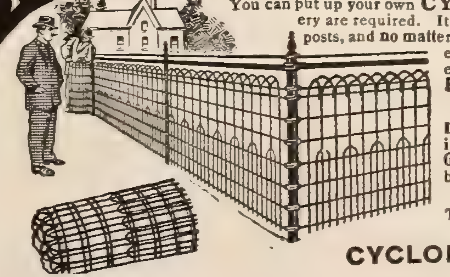
*One Policy* *One System* *Universal Service*

EASY TO PUT UP **Cyclone Lawn Fence** LASTS A LIFETIME



You can put up your own **CYCLONE FENCE**—no expert workmen or special machinery are required. It will go up **smooth, straight and tight,** whether you use wood or iron posts, and **no matter how uneven the ground.** And once it is up your fence troubles and expenses are *ended for the rest of your life,* for **CYCLONE FENCE**—especially when put up on our iron posts with wrought bases is **ABSOLUTELY PERMANENT AND REPAIR-PROOF.**

**CYCLONE FENCE can never sag or slacken.** It is made of **heavier and stiffer** materials than used in any other fence and in many handsome, artistic, exclusive patterns. **Cyclone Fence** is **GUARANTEED TO SATISFY YOU** and this guarantee is backed up by the biggest fence and gate factory in the world.

We also make the famous **CYCLONE TUBULAR STEEL FARM GATES.** They are to be depended on for satisfactory service. Let us show you how to get the best and save money. Expert advice FREE. Write for **Free Books.**

**CYCLONE FENCE CO., • Dept. 46, Waukegan, Ill.**

A New Book by

H. RIDER HAGGARD

Author of "She," "Ayesha," "Queen Sheba's Ring," etc.

RED EVE

IN THIS tale of the Middle Ages Rider Haggard has given us a picture, in his vivid and striking way, of the days when feudalism was in the land and every man held his life and love in the strength of his sword arm. Hugh de Cressy falls in love with Sir John Clavering's daughter, but her father and brothers are determined to marry her to a French nobleman. Hugh meets her secretly and they are planning flight when her brothers discover them. A conflict ensues and in defending himself and Eve, Hugh kills one of the brothers.

The lovers escape, but because Hugh has blood upon his hands the Church forbids the marriage for a year. This stay gives the French lord fresh opportunities and many thrilling adventures intervene to delay the union of Eve and Hugh.

*Four illustrations in colors by A. C. Michael*
*Fixed price,* $1.20 (*postage* 12c.)

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By Grace S. Richmond
¶ A bright wholesome story. All will be better for having made the acquaintance of the young heroine.—*St. Louis Post Dispatch.*
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¶ Here's a tale of the Big Woods with all the vigor and freshness in it of the open country which the author puts so graphically before you.
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¶ A new volume in "The Crimson Classics" Series.
¶ "It will be a delight to the children as well as entertainment for their elders."
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Garden City Doubleday, Page & Co. New York

"Don't raise that window — you'll be drenched!"
"Don't lift that sash — you'll freeze us all!"
"Don't lean out so far — you'll surely fall!"

These are the exclamations you hear when someone is struggling with the old-fashioned shutter fastenings. Avoid all this by equipping your windows with the

Mallory Shutter Worker

Easy to put in; durable; not expensive. Shutters fasten firmly back — *can't* rattle. Can be easily opened, closed or set at any angle desired, from the inside and without raising sash.

Write today for FREE booklet telling the whole story.

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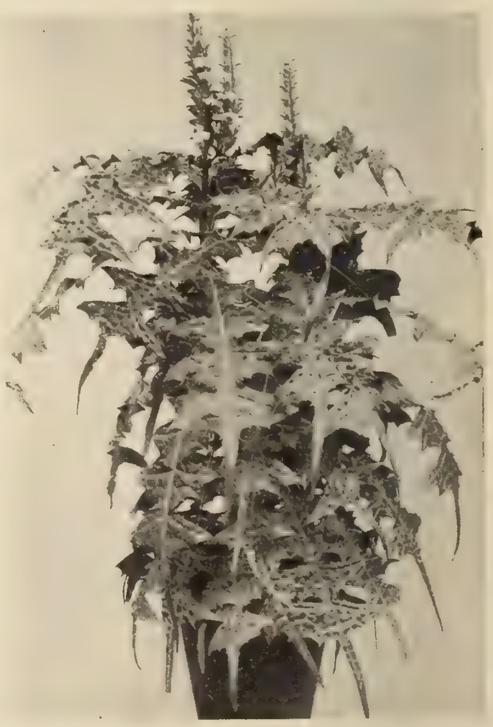
fumigating storehouses filled with grains, etc., which had become infested with insects, tetrachlorid proved to be less destructive to the insects than bisulphide — in fact, it could be used successfully as a substitute for bisulphide only at the rate of 10 pounds to 1,000 cubic feet, which is about ten times the quantity of bisulphide needed for fumigating the same space.

Therefore, in the opinion of the Department experts, unless tetrachlorid can be manufactured and sold at a much lower price, it cannot be as economically employed as carbon bisulphide as a remedy for insects in warehouses, mills, etc., but might be used for fumigating choice seeds or plants in the house, where the specimens to be treated can be enclosed in an air-tight box and where the use of inflammable materials is out of the question.

## An Unfamiliar Acanthus

AMONG the new plants which have been introduced into garden cultivation within the last few years, *Acanthus montanus* is one of the most attractive. It is an old plant to botanists, having been collected in western Africa in 1865.

One of the first plants sold in this country flowered in 1910 in a Philadelphia garden. It attained a height of nearly four feet. The leaves were twelve to fifteen inches long, narrow, and very deeply and irregularly lobed like a dandelion leaf. Each lobe terminated with a long spike-like point. The leaves were of a dark olive green and marbled with a bright yellowish green, the midribs being somewhat brighter than the other markings. The flowers were borne in a narrow spike about a foot long. They were set rather closely together, were rosy white in color with purple veined bracts.



*Acanthus montanus* is one of the most attractive of plants recently introduced into garden cultivation

The plant illustrated was about fifteen months in making its growth and in flowering; when purchased it was a small plant in a 3-inch pot.

This acanthus should be grown in a house having a night temperature of 60 to 65 degrees, with a rise of 10 degrees during the day. A palm house is an admirable place for this plant. It can be propagated by cuttings in a bench having a little bottom heat. After the cuttings are rooted, put them in small pots in a light compost mixed with one third its bulk of peat. As the plants grow they must be shifted to larger pots, using the same soil. The plants will ultimately need a 9- or 10-inch pot in which to flower.

Pennsylvania. H. Clarke.

SHEEP'S BRAND HEAD
TRADE MARK
NATURAL GUANO CO. AURORA, ILLINOIS

## Sheep's Head Brand
PULVERIZED
## Sheep Manure

Nature's Own Plant Food. Ideal for all crops; especially adapted for lawns, golf courses and estates. Growers of nursery stock, small fruits, hedges and gardeners generally will find Sheep's Head Brand the best fertilizer. Contains large percentage of Humus and all fertilizing substances necessary to promote Plant life. Tests place it far ahead of chemical or other fertilizers. Readily applied to the soil. Let us quote you prices.

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Tells how to fertilize the soil so that productive crops may be raised. Special matter for lawn and market gardeners, Florists, Nurserymen and Farmers. Sent FREE if you mention this magazine.

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Standard AMERICAN The World Over

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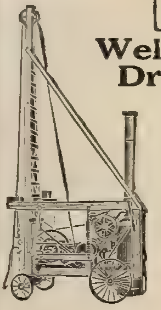

43 years' successful operation. Used in nearly all parts of the world. We make a complete line of Drilling Machines and tools for every condition of **earth** and **rock** drilling and **mineral** prospecting. Complete catalogue No. 120 showing over 40 styles of machines **free**.

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under soil and climate advantages, **Steele's Sturdy Stock** is the satisfactory kind. Great assortment of Fruit, Nut, Shade and Evergreen Trees, Small-fruit Plants, Hardy Shrubs, Roses, etc. Fully described in my Beautiful Illustrated Descriptive Catalogue—it's free!

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Everybody loves Lily of the Valley. By far the most delicately beautiful of all flowers. They are perfectly hardy, easily grown and require no attention after once setting out. They grow and multiply year after year. The roots have usually been rather expensive, but we now offer choice, large, well-grown roots,

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100 for $1.00, 1,000 for $8.00, charges prepaid, with full directions for growing. They are nice to plant beside porches, in borders, among shrubbery, in shady nooks and in cemeteries. They produce an abundance of lovely, pure white, bell-shaped flowers, which are deliciously fragrant. Large, descriptive catalog of **all kinds of** plants, seeds and bulbs mailed free. Ask for it.

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WHETHER your floors are old or new, of soft wood or hard, painted or unpainted, stained or unstained, or covered with linoleum or oilcloth, you can easily keep them in a beautiful, bright, sanitary condition with

STANDARD VARNISH WORKS
## ELASTICA
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Look for this Trade-mark on a Yellow Label. All others are imitations

STANDARD VARNISH WORKS
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### The One Perfect Floor Varnish

ELASTICA is especially intended for use on **wood floors, oilcloth and linoleum.** By following the directions on each can of ELASTICA, you can easily secure a beautiful, sanitary, faultless surface which defies the hardest sort of wear—a floor which is **heel proof, caster proof** and **boy proof.**

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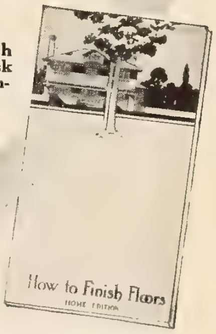

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Mention The Garden Magazine when you write.

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Best varieties for vineyard and garden. Millions of vines for sale. Our free book gives instruction for planting, cultivating and pruning. Profusely illustrated. Issued by the largest growers of grape vines and small fruits in the country. **T. S. Hubbard Co., Box 55, Fredonia, N.Y.** **Send for FREE BOOK**

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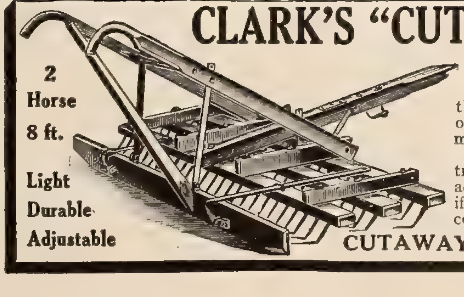
**Also used for grading and leveling**

**2 Horse 8 ft.**

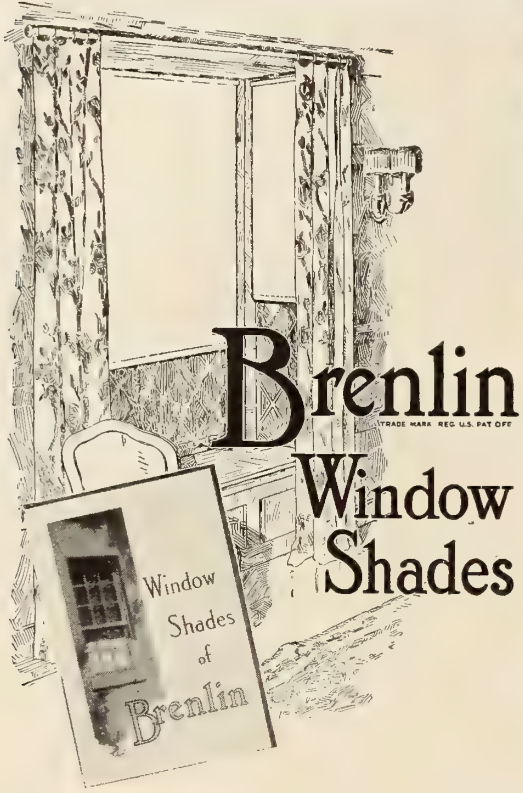
**Light Durable Adjustable**



With this light, handy tool any field can be made as smooth as a floor, and the soil pulverized fine enough for a flower bed — makes a most perfect onion bed. In twenty minutes you can easily smooth an acre as true as a mill pond.

It's a great road maker. A man with team can make a perfect trotting track of any road. The driver controls entire action of this harrow with one adjustable lever. One horse, 6 ft.; two horse, 8 ft. Made in other lengths, if desired. Send for our new catalogue, "Intensive Cultivation." Free, of course. Write us a postal to-day.

CUTAWAY HARROW CO. **902 Main St., Higganum, Conn.**



**The Brenlin Book** Before you select your shades, write for this booklet. In it are actual samples of Brenlin in all colors and in Brenlin Duplex, light one side, dark the other; and many helpful suggestions for the treatment of your windows.

Brenlin is the most attractive, durable window shade material made. It is a closely woven cloth—*not* a coarse muslin with chalk or clay "filling." It is this "filling" in ordinary shades which cracks and falls out after a few months' use leaving unsightly cracks and pinholes.

There is no "filling" whatever in Brenlin. It will outwear several ordinary shades. It always hangs smooth and even—never wrinkles. The sun won't fade Brenlin, water won't spot it.

Brenlin is *not* expensive. There is scarcely any difference in cost—for a few cents more a shade you can get Brenlin.

**Write today for this booklet**

With it we will give you the name of the dealer in your town who handles Brenlin.

So that you may know that you are getting Brenlin the name is perforated, BRENLIN along the edge of every yard. Be sure that you see it when buying, and when your shades are hung. *Chas. W. Breneman & Co., 2073-2083 Reading Road, Cincinnati. Ohio*

BRENLIN BRENLIN

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Plant breeding and selecting has been our business for years. We market the results in the shape of thoroughbred vegetable and flower seeds. They grow good crops.

**1912 Seed Annual Free on Request**
D. M. FERRY & CO., Detroit, Mich.

**SEEDS**

# *The* WINDOW GARDEN

## Growing Palms from Seed

THE palms are among the best plants that can be grown in the window garden, or for home decoration generally, as they withstand the vicissitudes imposed upon them by the average living room better than many plants. They are green the year around; all that is necessary to keep the foliage bright and green is reasonably careful culture and the frequent sponging of the leaves.

The easiest way to get palms for home decoration is to step into the nearest florist shop and buy them; but for those who delight in having their plants from babyhood, the growing of palms from seed will be found exceedingly interesting. The larger seedsmen of this country are able to furnish something like a dozen different species of palm seed, and they cost from thirty cents to two dollars a hundred, or from ten to twenty-five cents a packet, the packets holding from ten to twenty-four seeds according to the species and the price.

To be successful in raising seedling palms, the first requisite is to have fresh seeds. Unlike the ordinary vegetable and flower seeds all the new crops of palm seeds are not put on the market at the same time, for the seeds arrive from the various parts of the world where they are collected at various times throughout the year. To get fresh seed the best way will be to place your order with your seedsman asking him to send you the seeds as soon as he receives fresh supplies.

The big growers usually sow the seeds on benches in the greenhouse where they can have bottom heat, but the window gardener must content himself with sowing them in pots. A 6-inch pot is a good size to use. There should be an inch of drainage in the bottom of the pot, and the pot nearly full of good seed soil — one made of equal parts of a good loam and leaf mold with a little sand and charcoal to insure drainage will give satisfactory results. The seeds should be covered about a half inch deep.

You cannot expect palm seeds to germinate as quickly as the seeds of annuals. It will take anywhere from one to nine months for the seedlings to appear, but most of the seed will come up within two or three months. To insure as rapid germination as possible, keep the seeds in a warm place, with the moisture in the soil as even as possible. If a greenhouse is at your command a temperature of 60 degrees at night with a rise of 10 to 20 degrees during the day time, and a small amount of bottom heat, will insure germination of the seed within a reasonable time.

To avoid frequent waterings when starting palm seeds in the window garden a layer of sphagnum moss over the soil in the pots will be of considerable help. Better results will be obtained if there is a shallow box to contain the pots holding the seeds, over which there is a glass top, making a sort of Wardian case.

There is a great similarity in the first leaves of all the palms when they appear above ground, and it is difficult to tell one species from another.

It will not be necessary to transplant the young seedlings for some time after they appear. If there are many plants in the pot, they should not be left so long as to allow the roots to become intertwined, but where there are only a few in a pot they can be allowed to stand four or five weeks before being transplanted.

The best way to transplant the seedlings, if there are enough plants in the pot to satisfy your wants, is to carefully remove the whole mass from the pot, and wash away the soil from the roots;

**Wilson's Outside Venetians**

BLIND AND AWNING COMBINED

For town and country houses. Very durable and artistic. Easily operated from inside. Admit air; exclude sun rays.

**SPECIAL OUTSIDE VENETIANS**

Wilson's Porch and Piazza Blinds

for porches and piazzas, exclude the sun; admit the breeze. Virtually make an outdoor room, Orders should be placed NOW for Spring or Summer delivery.

Write for Catalogue Venetian No. 4.

Also inside Venetians. Rolling Partitions, Rolling Steel Shutters, Burglar and Fireproof Steel Curtains, Wood Block Floors.

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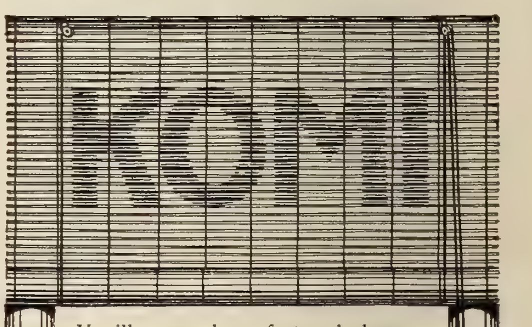

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Not a minute for delay if you want your Gladioli to do their best this summer. Bulbs ordered *now* will reach you in ample time for planting, but there is little margin. Gladioli should go in just as soon as ground and season are fit. This means that you must have your bulbs on hand. Order *now—today* —and you will have them. I am aware that a lot of people don't yet know what modern Gladioli are. I want them to know — want them to get acquainted. Here is an unequalled offer:

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*The story of a womanly woman who meets a crisis in her father's life as a man might have done and loses none of her feminine charm in the ordeal.*

WHEN KATHERINE WEST returns from the East on the eve of a civic celebration in her home town — a celebration in which her father, Dr. West, is to be the principal figure, she is stunned with the news that the Grand Jury has just indicted her father for accepting a bribe. The evidence against him is so strong that no lawyer can be induced to accept the case.

THIS is the tense situation into which a young girl unconsciously steps. Fresh from an Eastern college and the possessor of a diploma in law, Katherine West resolves finally to undertake the case for her father herself. To the old-fashioned towns-people of her native place a "lady lawyer" is something unthinkable, and the girl confronts public derision as well as an apparently hopeless case. One of her bitterest opponents is the ardent reforming newspaper editor — with firm convictions as to the proper sphere of woman — and the relation between these two produces a situation of romantic and dramatic power.

*Frontispiece in colors by Charles Chapman*
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Garden City **Doubleday, Page & Company,** New York

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this will obviate breaking the roots, which is very liable to happen if you dig out the plants as you would take out the seedlings of annuals.

A good soil into which to transplant the seedlings can be made from well rotted sod, leafmold, well decayed horse manure, and sand, but if these various ingredients are not available any good well drained garden loam will answer. You will find when potting these seedlings that the deep pots will be much better than the ordinary flower pots; a deep two and a half inch pot will be plenty large enough for most of the palms. Be very careful not to break the roots when potting the plants, for it is an injury from which the young palms do not readily recover.

After the plants are potted, water the soil to settle it, place the pots in the window garden and shade them with a newspaper. If it is convenient to use the Wardian case made from a box, as previously suggested, a moist atmosphere can be maintained about the plant which will be more conducive to their rapid recovery from the shock of being transplanted, as it will create a more congenial atmosphere.

After the plants have once taken hold of the new soil and are growing they can be removed from the case and given the same treatment as the other plants in the window garden. When the plants have filled the pots with roots, shift them into a pot one inch larger in diameter, using the same kind of soil.

Seeds of the date palm can be secured by buying dates from the fruiter, removing the seeds and washing them before planting. The following table gives some interesting facts:

| SPECIES OF PALM | TIME WHEN FRESH SEED MAY ARRIVE | MINIMUM NUMBER OF DAYS TO GERMINATE |
|---|---|---|
| *Areca lutescens*............. | April, May...... | 30 |
| *Caryota urens*.............. | July, August..... | 90 |
| *Cocos flexusosus*........... | various seasons... | 90 |
| *Cocos Weddeliana*........... | January......... | 75 |
| *Howea (Kentia) Belmoreana*.. | Feb., Sept., Oct... | 70 to 700 |
| " " *Forsteriana*.. | Feb., Sept., Oct... | 70 to 700 |
| *Latania Borbonica*.......... | February........ | 25 |
| *Livistonia rotundifolia*....... | August, Sept..... | 60 |
| *Phœnix Canariensis*......... | January to March | 60 |
| " *reclinata* .......... | January to March | 60 |
| " *Roebelinii* .......... | January......... | 60 |
| *Washingtonia filifera*........ | January to March | 50 |
| *Seaforthia elegans* .......... | various seasons... | 30 |

Pennsylvania. Parker T. Barnes.

## Red Berries for Next Christmas

IT IS quite easy to have growing plants laden with red berries at Christmas if you start now.

Among the prettiest and most attractive things shown during the last winter in the florists' stores, were the pepper plants (*Capsicum annuum*) and Jerusalem cherry (*Solanum pseudo-capsicum*). The color of the bright and glossy red fruit was so

Sow seeds of Jerusalem cherry now for plants in fruit next Christmas. The bright red berries endure several weeks

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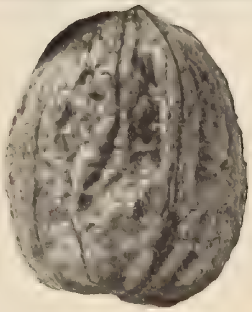

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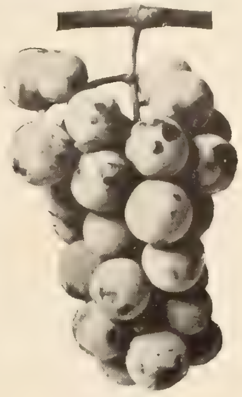

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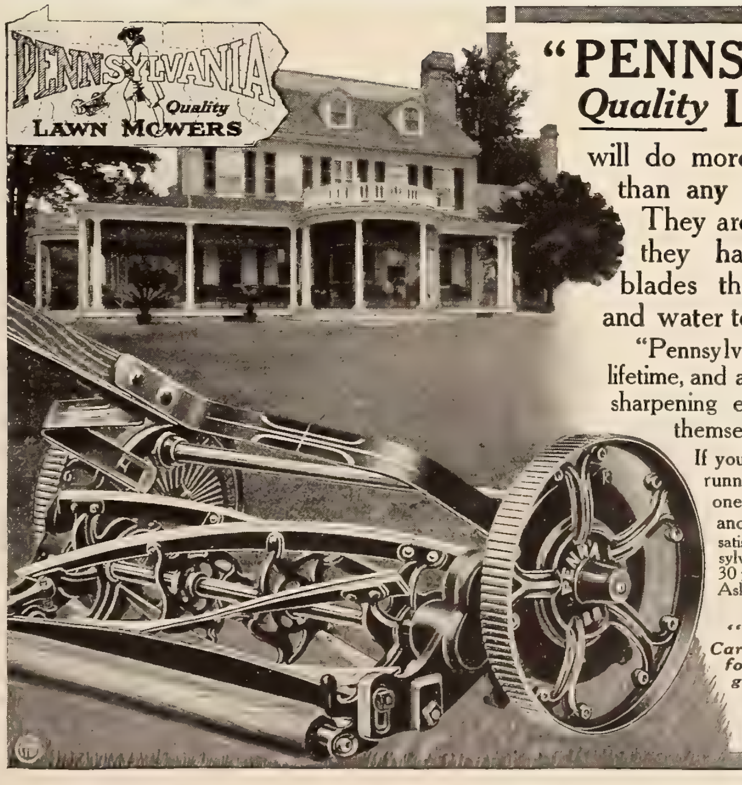

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strikingly appropriate for the Christmas season that the demand far exceeded the supply of both plants.

The pepper plant, while not new, has still the element of novelty. In order to have it for Christmas, one must commence preparations in the early summer. The plants are readily grown from seed. Sow the seed in shallow boxes during March and keep warm until germinated; afterward prick off the seedlings into thumb pots and after successive shifts plunge out of doors during the summer. Take them into the house as late as possible in the fall and keep in a sunny room. The plants should be in fruit before Christmas and will last for weeks.

Instead of leaving the fruit on the plant it may be cut for decorative purposes. A mantle decoration of branches of peppers carelessly arranged among maidenhair fern is striking. It would be well to lay the ferns on their sides so that the pots could not be seen. Large plants for this purpose are the best as they show up better. The cut stems laid around a dining table, by the individual plates, make a pretty display and a centrepiece made of the peppers is also striking.

Give the pepper plant plenty of room when growing. Crowding will make it run high

The old but deservedly popular Jerusalem cherry can be similarly grown from seed by starting in February or March. The plant practically takes care of itself.

The pepper and the cherry and an abundance of ferns certainly solve the question of appropriate Christmas decoration at very small expense.

Massachusetts. L. J. DOOGUE.

## Naturalizing Columbine

IN THESE days of naturalizing, more attention should be given to the possibilities of the columbine. For the native red columbine (*Aquilegia Canadensis*) a rocky place, preferably with a little shade, is best; but, failing that, an excellent effect may be created by letting it loose in thin grass. There is one place on Long Island where it does well in fairly thick grass, having made itself at home on both sides of the country pathway, which is glorified for a little distance by the hundreds of nodding red flowers. As the plants are near a dwelling, they are probably "escapes" from a garden. Quite as striking an effect in the wild, but easily duplicated by naturalizing, is a bit of mountain hillside with no end of the yellow columbine (*Aquilega chrysantha*) in the thin grass. The cultivated blue, purple, pink and white varieties similarly may be used in the thin grass or in a small grove of such spindling trees as the white birch and locust.

Maine. G. D. B.

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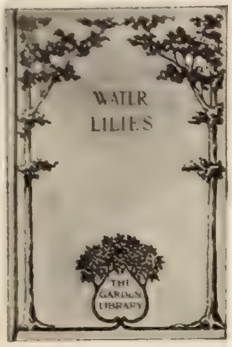

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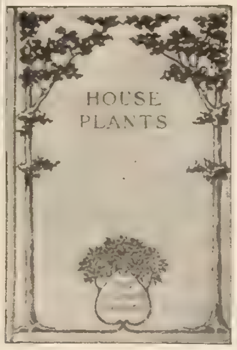

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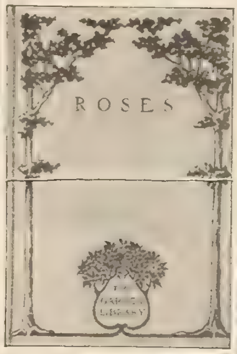

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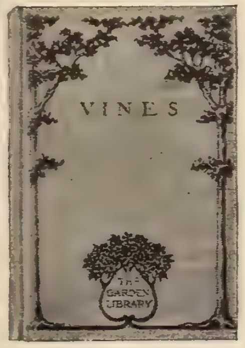

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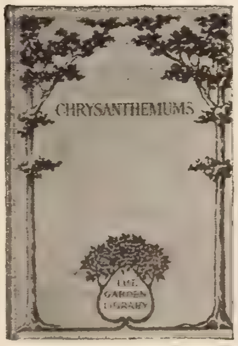

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It tells which kind of seed to use for each purpose, it describes the Michell Grass Seeds which have produced finest lawns the country over—from the White House Grounds at Washington, to the Exposition Grounds at Philadelphia, Buffalo, Jamestown and Portland, Oregon.

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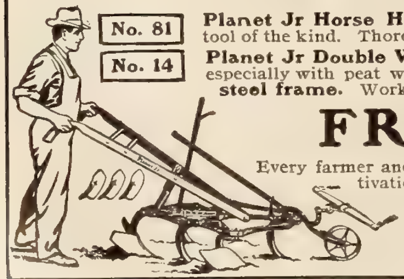

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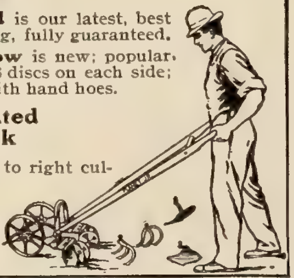

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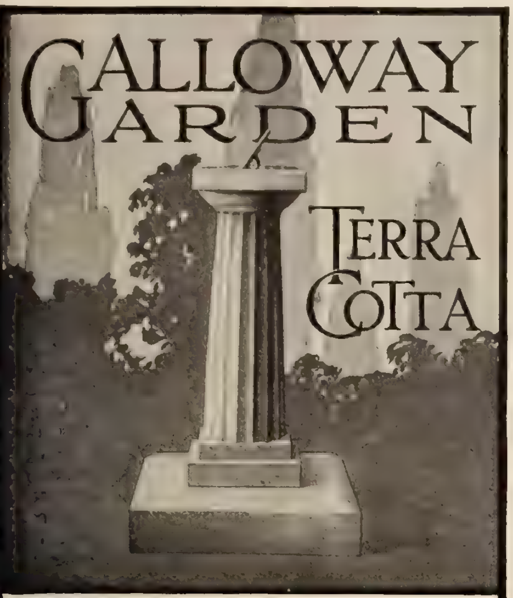
WHEN I first went to Florida gardening was a puzzle, nor can I say that it is fully explained as yet. I found after awhile, however, that we were to plant not all things at one time, but some things nearly every month. The wet season is the summer and the dry season the winter of the South. During this dry season irrigation must take the place of showers; that is, from November first until the first of June. It would be folly to undertake to grow sweet potatoes in the dry season. I also found that we were to plant a good many things to hit the Northern market — that is, get into New York and Boston ahead of Georgia and Virginia with our strawberries and our cabbages and lettuce.

For these reasons we plant potatoes in January; our first celery we put in in October or a little sooner; the next planting in January and the next in April. Melons are planted in March or April, and we begin to harvest them the last week in May, although last summer I had watermelons from June 1st to September 15th — muskmelons will cover even a longer period. With extra care there is no reason why they should not be had until November.

My chief trouble is that there is, for me, no way of marking the seasons. I have to think before I know whether it is summer or winter. I found a peach tree in blossom in September, evidently getting ready for 1912; not a mere bunch of flowers out of season, as an apple tree will sometimes break out in the North, but the whole tree coming into blossom.

Clearly it had forgotten the time of the year. When I first reached the state, about November 1, 1910, there were several peach trees in my orchard in bloom, and they went on to set their fruit in midwinter. Some of these gave me ripe fruit in March. The loquats act a little sheepish about their work, blossoming from July to January, but they do not undertake to set fruit from their early blossoms. They go on flowering till the proper time comes, and then the trees will be loaded with pear-like golden fruit — unless about that time a frost nips them. How this fits in with excess of bloom I do not know; but it is true that the same bush will blossom twice as long in Florida as in Massachusetts. The Judas tree, which in the North never thinks of more than three weeks' florescence, here goes from one solid bloom into a second, and the leaves impatiently begin to develop before the flowering is ended. Crepe myrtle, which is our Southern lilac, blossoms over and over again for three months, completely covering its bushes with pink or purple or white.

Wild flowers have to take their turns as they can. After a very close succession of lavender and blue flowers, in which there is a wild pea fully the size and glory of a sweet pea, the partridge pea lifts itself up and covers whole counties with its brilliant and beautiful shades of red and yellow. All under the pine woods this sensitive foliage shrinks from touch and from rain drops. A legume, like most of the rest, it is part of Nature's provision for fattening the soil. All through the year this succession of wild plants and flowers crowds, crowds crowds. The little lakes are rimmed with yellow and then with white and then with purple. Oranges blossom in March, but they are not satisfied and blossom more or less in May. The lemon has a monthly growth, and each month's growth has its own flowers and fruitage. Mulberries do not continue fruiting on the same tree month after



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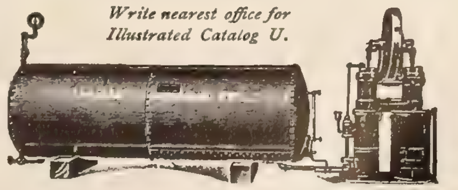

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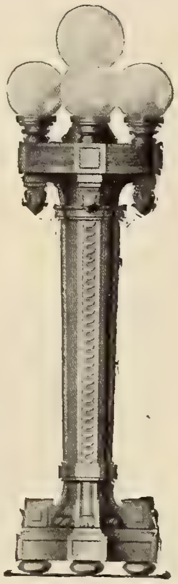

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Hens make the confusion worse by moulting in July, and laying most of their eggs in midwinter. You can hardly get used to such abnormal performance. Yet how handy it is, for eggs bring fifteen cents in July and thirty-five in January. The Northerner hunts for a possible egg in November; just then I can get my hat and pockets full without any difficulty.

Potatoes, which I have said were planted in January, can be planted again in July. They want the low lands by the lakes; and all of these low lands must be sweetened with a lot of lime. Sweet potatoes want the higher slopes, and melon vines like the uplands. They will absolutely cover great openings in the pine groves with melons that weigh from twenty to fifty pounds. The shippers select the heavier stock, but after the carloads have gone North, averaging forty pounds to the melon, there are still splendid melons to be had for the asking.

If you stay here the year around, however, and watch the way that the people and Nature operate, you will find that the horticultural year really begins about September 1st. You might fairly call this New Year's Day. Now you make your first garden. It consists of cabbage and carrots and collards and beets and turnips, while we generally count in mustard and scoke for greens. Lettuce, of course, we can have at any time—lettuce as big as a half bushel is in order for Christmas. We ship cabbages and crates of lettuce in January. We begin to pick oranges in November, and get through with the main crop in May—except a few late sorts that hang on all summer.

Our special hindrance is, first of all, the nature of the soil. In the centre counties or pine sections the soil is almost invariably sandy; and the humus which ought to have been enormous, has been either burned out or prevented from forming, by the fires which are annually kindled in midwinter, and allowed to sweep over the state. Our houses and gardens are invariably protected by fire lines that are plowed ten or twelve feet wide. This burning is a terrible waste, in fact it costs the state millions of dollars every year; yet without annual burning the accumulation of dry vegetation would be so great that an accidental fire would obliterate forest trees as well as weeds. Of course, this burning must be stopped as fast as we can get the lands under cultivation.

The first necessity for the gardener must be to replace this humus which is burned. Nature will help him enthusiastically with legumes, and he has but to plow them under. The use of muck from the lakes will help out this problem greatly, for the lakes are everywhere, and in the dry season the muck can be obtained in vast quantities; only it is very sour, and needs aerating and liberal liming. The compost pile should always be on hand and it should have a good percentage of lime, much more than in the North.

A very large part of Florida is flat, and in the wet season is swampy and malarious, as well as mosquito infested. It is true that much of this flat land is very rich for gardening, although it needs draining half the year and irrigating the other half. Some of it is celery land, and the higher parts are excellent for white potatoes. Pineapples, mangos and other semi-tropical fruits flourish in the wet lands along the coast. The Northerner will find his normal place in the centre of the state, where the land is high, rolling, healthy, and the water is of the best.

The hollows of this central section are full of lakes that float water lilies, while most of them are supplied with fish. Tourists as a rule do not visit this part of the state, but have heretofore been found in the palm-growing sections. Settlers should be careful not to trust one word of the phenomenal promises of land promoters; they should never buy an acre until they have seen it.

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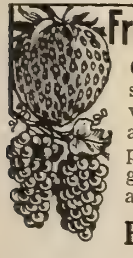

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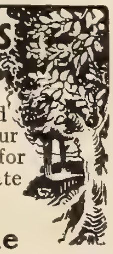

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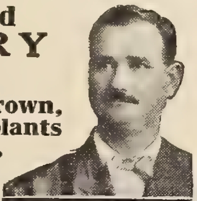

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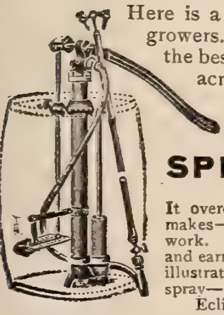

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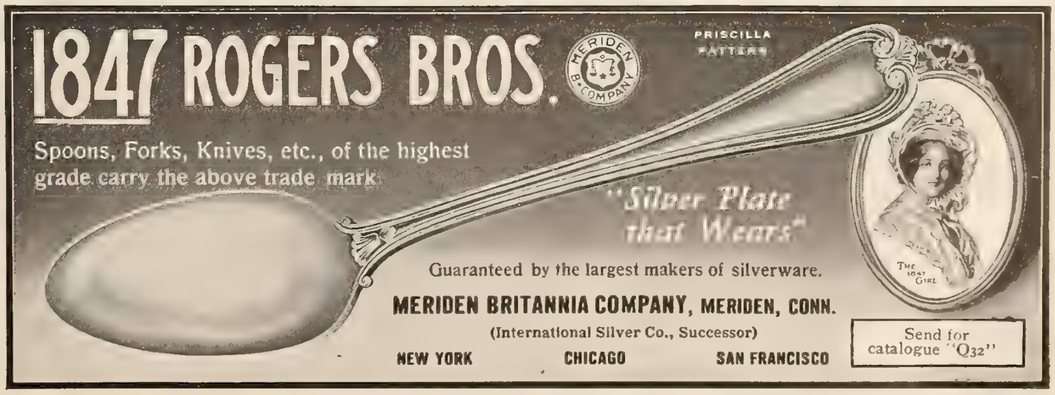

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ward, droop them here in such a way as to shade their own roots. To this Nature adds a simply indescribable superfluity of creeping plants. These cover every square inch of the soil, and being almost always legumes, they put nitrogen into the ground. If plowed under they make humus with immense rapidity.

Everything in Florida should be mulched. No tree should ever be planted without a heavy dressing of pine needles or other waste stuff. This must be renewed frequently, and the old stuff gradually worked into the soil as more humus. Composting is, of course, a necessity. Compost your muck with lime, compost your legumes and every particle of vegetation that will rapidly decompose, only always add lime. The velvet bean grows fifty feet in a season, and cowpeas fifteen; inviting frequent cuttings for hay, while the balance can be plowed under late in the season. Florida is the greatest hay state in the Union, yet two thirds of the hay that is used is imported, simply because the people have preferred to grow something else. New grasses are being tested, and some of them are proving very satisfactory.

Of insect enemies we have the curculio and the peach tree borer, and some others with which we are familiar in New England. With these we have unfortunately the root gall, and in a very bad shape. The grape leaf-folder has a capacity for mischief that I hardly ever saw equalled. The gopher or ground squirrel is a fellow of amazing shovel power, who puts his talents for mischief out at interest. He is a real squirrel, with pouched cheeks, only he does his work underground. Sober old turtles of a foot in diameter lug themselves around our gardens, tramping a good deal, and eating our sweet potato vines. Two or three years of gardening will, however, pretty nearly get rid of both gophers and turtles.

On the whole gardening in Florida is full of promise for an energetic and studious person. He must be willing to learn and he must be willing to work; then he has his crops ready for the Northern market ahead of any other possible supply. If he grows for home he can have about everything that can be used, while his chickens are at work over the fence on one side, and bees on the other side. The migrant, I mean the person who regularly spends his winter in Florida, if he gets here by the last of September or the first of October can raise all his own vegetables. If he cannot reach Florida till November he can still have his cabbages and carrots and turnips and lettuce and eggplant, as well as his oranges, loquats, grape fruit, and a lot more fruits in his back yard. He can have peaches and plums, but not so easily cherries. He can grow all the grapes he wants, if he can stay late enough to eat them. At any rate he will have all the fruit and all the vegetables he can dispose of. Most of the cottages that are rented are also supplied with fruit.

E. P. POWELL.

## Planting for Summer Harvests

THE busiest season of the whole year approaches; there are undoubtedly more seeds planted this month in Georgia than in any other month of the year!

Make another planting of white potatoes and continue to plant every month until August, so as to have them fresh for use during the whole season. If possible, store some for the winter. Irish Cobbler and Green Mountain are the two best varieties for main crop or late planting.

Plant all kinds of beans now in the middle and lower South.

Your last chance for sowing onion seed in this section! For a good crop, sets may be planted at any time, but onions grown from sets are not as good as those grown from seed and they will not keep so well, either.

Continue to sow seeds of beets, turnips, radishes, mustard, kale, lettuce, spinach, sorrel and leeks, also endive, dandelion, Brussels sprouts, carrot, parsnips and parsley. A red, loamy clay soil will produce the largest and sweetest beets.

Sow seeds of nasturtium, petunia, poppy, marigold, four o'clock, lobelia, cockscomb, candytuft, aster, alyssum, balsam, cosmos, phlox, and other annuals.

Plant out canna roots now. Seed may also be

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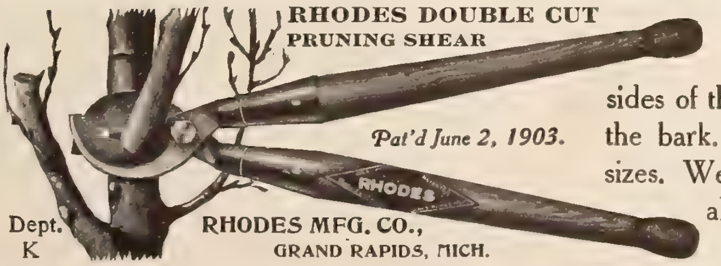

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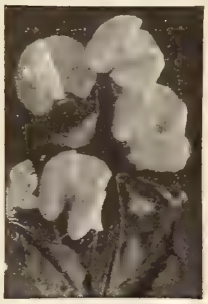

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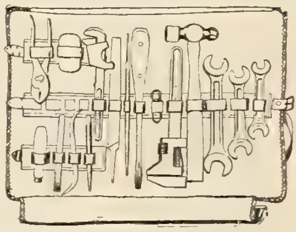

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sown now, and although it is a slow way to grow them, it is a good way to get new varieties.

Seeds of dahlias may also be sown now, and roots planted out. Dahlias will flower the first year from seed, but the flowers will not be so large as those on plants grown from roots. Dahlias grown from seed are almost sure to produce brilliant colors.

Gladiolus succeed better if planted early in the season. In the middle South plant them now.

Prepare for planting corn for the main crop toward the end of the month. Select a prolific variety with medium sized ears. Get the seed from some reliable person in your own section of the country, if possible. Northern grown corn is not good for the main crop, but plant it for an early crop.

Get in the oats at once. Sow only on rich or well fertilized soil, as very rapid growth must be made. Use early varieties only.

Continue to set out cabbage, cauliflower and celery plants.

See that pansies and sweet peas get sunshine and cultivation. Sunshine is particularly necessary now in order to induce flowering, but a little later in the season the plants must be protected from too much sunshine.

See that the tomato, pepper and eggplants are not growing too thickly in the hotbed or in the boxes in the house. Remember that if they stand too close together, they will grow tall and thin stalked, which will greatly reduce their fruiting capacity.

Georgia. Thomas J. Steed.

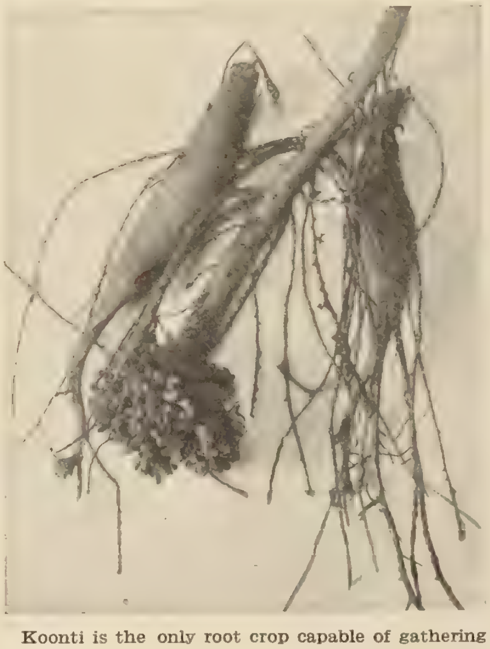
## More Remarkable Koonti Facts

### Nitrogen-gathering bacteria found on this plant of the tropics—Explanations of its many-sided utility

SINCE writing the article on "The Humble Koonti" in the January issue of The Garden Magazine I have read in the United States Agricultural Yearbook for 1910 that plants of the order Cycadaceæ have large nodules on their roots and are capable of appropriating nitrogen through this agency as do the legumes. Since the koonti belongs to the cycad order, I began a search at once and was soon rewarded by finding the typical cycad nodule on its roots.

This plant, already famous because of its peculiar fecundation, is also unique in being, so far as known to the writer, the only *root crop* capable of capturing its own nitrogen direct from the air of the soil by means of these peculiar coral-like bacteroid root masses.

No wonder this plant flourishes where other



Koonti is the only root crop capable of gathering its own supply of nitrogen. Note the coral-like cluster of nodules

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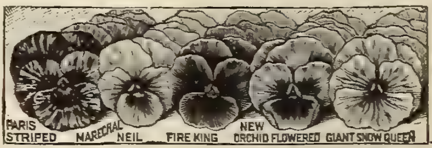

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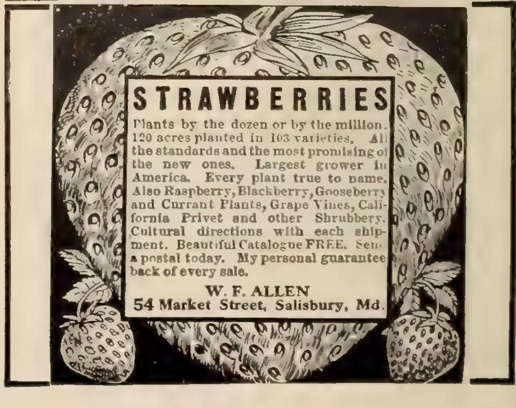

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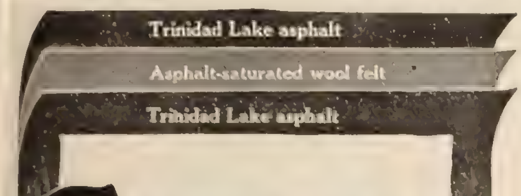

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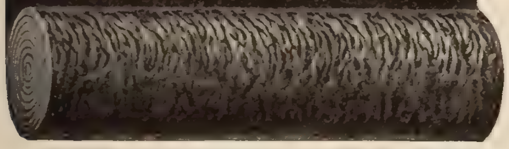

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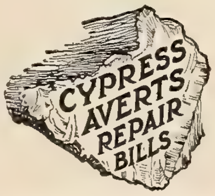

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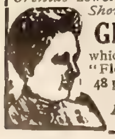
SEND ME TEN CENTS

If you will send me the addresses of two of your flower loving friends, I will send you my bargain collection of *Spencer Sweet Peas*, *Giant Orchids* flowering type, *Nasturtiums*, dwarf chameleon mixed, *Royal Show Pansies*, *Asters*, finest mixed; also 30 seeds of the



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which **blooms in 4 months from sowing**; also **Free**, "Flower Culture" and my descriptive 1912 catalog containing 48 pages. Write **today**, enclosing 10 cents,

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root crops would starve without the application of fertilizer! No wonder the red water from the starch washings enriches the soil! No wonder this pumice residue from this starch manufacture is excellent for a fertilizer filler or a mulch around citrus trees! The supply of nitrogen has really come from the air and has been "fixed" or captured by these bacterial nodules.

This plant is indeed a wonder. It grows in the hot sands and rocks among pines and palmettoes and is burnt over by forest fires without being choked out or killed.

All the while in fact, the soil is being improved by its presence. Being the only root crop capable of garnering its own supply of nitrogen, this plant should be improved and its cultivation encouraged over a wider area. By inoculating the soil with its special type of bacteroid as is done with clovers it might succeed and prove of great value in certain dry tropical districts where other root crops fail.

A root crop on some of the rocky limestone lands of South Florida, where soil of any kind is at a premium seems anomalous, nevertheless, the roots of this hardy plant find places in the crevices. On well prepared soil the returns could be increased many fold.

Florida. John Gifford.

## Improving the Garden Soil

ABOUT three years ago we moved to the suburbs and I spent the first winter planning my garden. But in the spring I was disappointed, for I found the soil a sticky clay which could not be easily dug, for the soil would stick to the fork and it was almost impossible to break the lumps apart. A load of sand and two loads of manure was mixed with it but did not help very much. I planted nothing but annuals that year and, in one particularly bad spot, planted nasturtiums. The result that fall was a very poor garden indeed, and except for the nasturtiums, which yielded hundreds of blossoms, I would have been utterly discouraged.

Some of the other flowers I planted did not come up at all and those that did had very few blossoms because I could not cultivate them. When I tried to cultivate, the soil, instead of loosening, would come up in lumps, sometimes bringing the plant with it.

That fall we bought another load of sand and two loads of manure and had the whole garden dug and left that way throughout the winter. I planted a few tulip and crocus bulbs. The following spring I again planted nasturtiums in the same place and again they furnished me with quantities of blossoms.

The tulips made a pretty display and somehow I forgot to dig them up when they were through blooming. The next year each bulb had two flowers in place of one, which measured three inches across, whereas those the first year measured only two inches.

I could not afford more sand, but was determined to have a garden worth while. So as soon as the weather was cold enough to have a fire I began sifting coal ashes and used the fine dust on the beds all winter. Last spring we bought a load of manure, had it dug under and the ashes spread over the top of each bed, hoed and mixed with the top soil. This loosened the soil and made it easy to cultivate. I had a beautiful garden all summer; all the seeds germinated and each plant yielded an abundance of blossoms. I had a bed of double poppies which every one mistook for chrysanthemums, each flower measuring seven inches across. My cosmos grew to be seven and one half feet tall.

The entire cost of the garden for three years was $18.00, as follows:

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| Improving garden soil first year | |
| 1 load of sand | $2.50 |
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| Two loads of manure | 2.00 |
| | $9.00 |
| Cost of the garden the second year | |
| 1 load of sand | $2.00 |
| 2 loads of manure | 3.00 |
| For digging | 1.50 |
| | $6.50 |
| Cost of garden the third year | |
| 1 load of manure | $1.00 |
| For digging | 1.50 |
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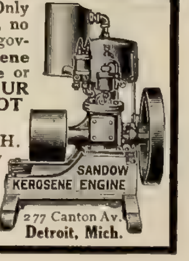

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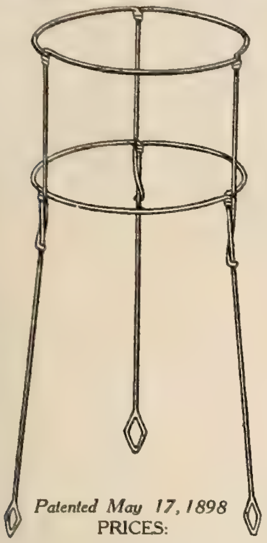

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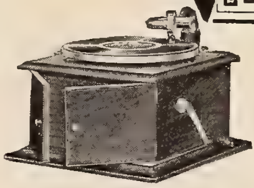

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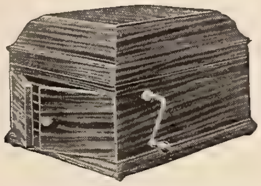

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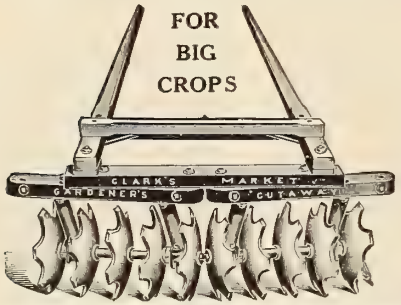

This harrow is used extensively by gardeners and truckers in the South and other vegetable growing sections. In Florida it is a great favorite for orchard cultivation.

Made light for shallow cultivation; cuts two to four inches deep if desired. No seat supplied unless ordered.

Made in three sizes:

**No. 0 1-horse, with 2 gangs of five 14 in. disks each**
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**"000 Hvy. 2-horse, 2 gangs, seven 14 " "**

No gardening equipment is complete without one or more of these harrows. Used on their experimental grounds at Garden City, L. I., N. Y., by the publishers of The Garden Magazine.

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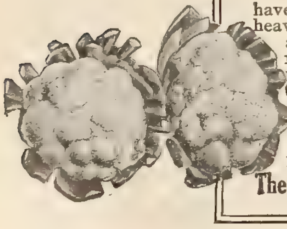

With Sunlight Double Glass Sash, you don't have to cover and uncover the frames with heavy mats and boards. The small 5/8 inch air space between the layers of glass affords perfect protection against frost, and your plants get all the light and warmth they need.

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Send us your name and address and we shall mail you our free catalog and net price list. We shall make immediate shipment on receipt of order. On receipt of 4c we will mail you in addition, Prof. Massey's book on cold frames and hot beds, an authority on the subject. Write for these books today.

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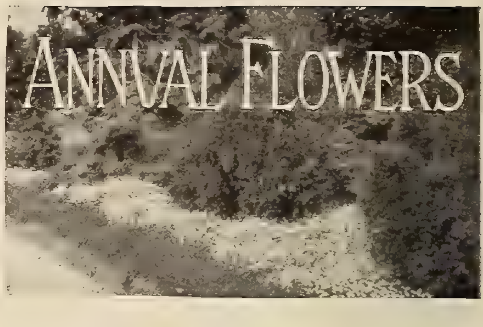


## What One Ought to Plant

WITH so many easily grown annuals to choose from it is worth considering a little that we may get something that really fits into its place and fulfils the purpose in view. Unsightly gaps in the garden may occur or there may be a bare fence or wall that needs hiding. For this annuals offer an immediate solution, if we take pains to select proper ones. We must not be careless as to color and form, for at their height of bloom they should make delightful combinations with the longer lived plants in the garden.

Avoid seed mixtures unless you know just what colors are used, for frequently there are, in these mixtures, colors that are either garish or mediocre when used with neutral or vivid tones. Petunias, zinnias and phlox are sometimes most disappointing when grown from mixed seeds. It is better to buy distinct varieties and plant them in the desired contrast.

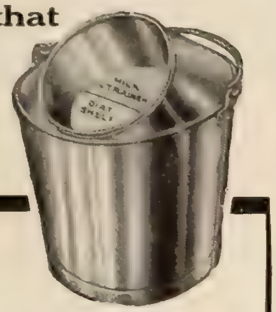
Coreopsis, cosmos, poppies, and most annuals of simple form are very effective in broad plantings. Field effects are charming indeed.

Flowers borne in racemes are peculiarly striking against walls, dark hedges, or in corners. Low plants of compact habit are very useful as path outlines. Wild-flower types are at their best in colonies.

The following is a classification of certain annuals with regard to their location in the garden and the proper distance apart to plant:

| SPECIES | PREFERRED VARIETIES | DISTANCE APART |
|---|---|---|
| For Borders | | |
| Sweet alyssum | Little Gem | 4 to 5 in. |
| *Ageratum Mexicanum* | Imperial Dwarf Blue | 10 in. |
| Dusty miller | *Cineraria maritima* | 10 in. |
| Candytuft | Empress (white) | 10 in. |
| Mignonette | White Pearl | 10 in. |
| Tom Thumb nasturtiums | Ruby King<br>Golden Dream<br>Empress of India (red)<br>Vesuvius (pink)<br>Ivy-leaved Snow Queen<br>Golden Butterfly | 8 in. |
| Pansies | Trimardeau<br>Cassier's or any large-flowered strain | 8 in., in double or triple row. |
| Dwarf snapdragon | Pink Empress<br>Black Prince<br>Queen of the North (white) | 10 in. |
| For Beds and Masses | | |
| Scabiosa or Mourning Bride | Snowball<br>Caucasica (blue bonnet)<br>Minor aurea (yellow) | 15 in. |
| Balsam | Double White<br>Peach Blossom<br>Camellia Flowered (white)<br>The Queen (rose pink)<br>Prince Bismark (salmon) | 18 in. |
| Calliopsis | Golden Wave | 24 in. |
| Coreopsis (Biennial, blooming first year) | El Dorado | 24 in. |
| Globe Amaranth | (Nana compacta) | 24 in. |
| Godetia | Rosamond (rosy pink)<br>Princess of Wales (crimson)<br>Fairy Queen (white and carmine) | 12 or 15 in. May be grown in shady places |
| Poppies | English Scarlet Field<br>Shirley | Sow the seed where the plants are to bloom and thin to one foot apart |
| California poppies (Eschscholzias)[1] | Golden West<br>Crimson King<br>Dainty Queen (blush) | Broadcast seed |

## The Milk Pail that Keeps Milk Clean



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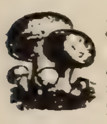

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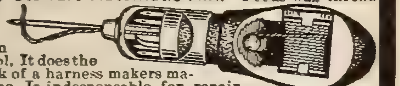

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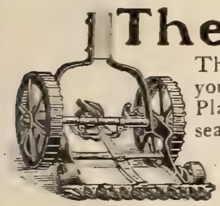

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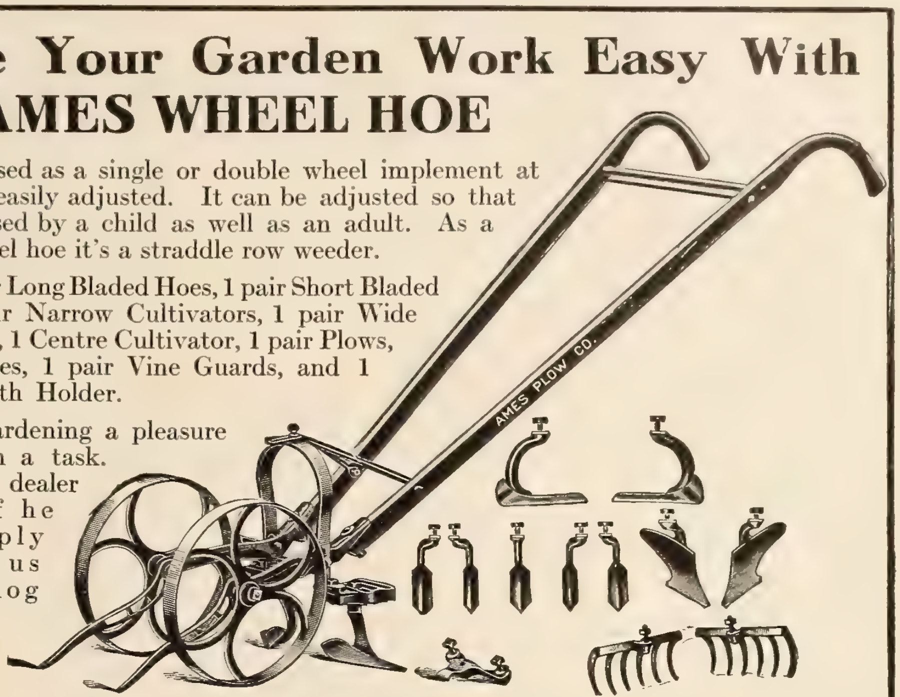
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It has 1 pair Long Bladed Hoes, 1 pair Short Bladed Hoes, 1 pair Narrow Cultivators, 1 pair Wide Cultivators, 1 Centre Cultivator, 1 pair Plows, 1 pair Rakes, 1 pair Vine Guards, and 1 Centre Tooth Holder.

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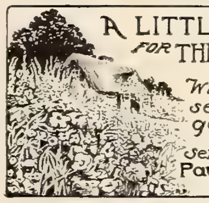

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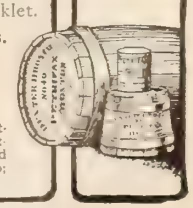

*Some of the characters in*

DANNY'S OWN STORY

**Danny**

Autobiographically, Danny says: "There wasn't nothin' perdicted of me, and I done like it was perdicted. If they was devilment anywhere about that town they all says: 'Danny, he done it.' And like as not I has. So I gets to be what you might call an outcast."

**Old Hank Walters and Doc Kirby**

"Look at me," and he swells his chest up. "You behold before you the discoverer, manufacturer and proprietor of Siwash Indian Sagraw. You don't know what disease you may have."

**Mis' Rogers**

Who comes to share in a neighborly way the grief at Hank's sudden death in the cistern.

"All of a sudden, a live fish come a whirling out of that hole and it lands kerplump into Mis' Rogers's lap."

**George**

*"A bareheaded old nigger with a game leg."*

"I'se mos' ingin'lly notice a thing do settle hitse'f arter a while."

**Dr. Julius Jackson**

*" The man with an idea."*

"The glorious, humanitarian idea of taking the kinks and curls out of the hair of the Afro-American brother at so much per kink."

*"The most delightful bit of humor in many months."*

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*By Don Marquis*

¶ Danny enters upon the scene nameless, a baby in a basket abandoned before the door of Hank Walters, the blacksmith. From that very minute the fun begins — such real, delicious, irresistible fun as only Mark Twain and O. Henry have hitherto furnished the world.

¶ The boy runs away presently with a peripatetic "Doctor," whose mission is to make known the wonderful powers of "Siwash Indian Sagraw"; and he plunges into the kaleidoscopic life of the patent-medicine fakir, small circus shows, and so on, with a zest in life and a human philosophy in his side-splitting humor that are quite amazing.

*Illustrated irresistibly by E. W. Kemble*

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PLANTING TABLE — *Continued*

| SPECIES | PREFERRED VARIETIES | DISTANCE APART |
|---|---|---|
| Zinnias | Tall Double Varieties<br>Scarlet<br>Carmine<br>Rose<br>White | 18 in. |
| | Dwarf Double<br>Lilliput Scarlet Gem (white) | 12 or 15 in. |
| Marigold | Eldorado<br>Lemon Queen<br>French Tall Dark Brown | 18 in. |
| Snapdragon | Coral Red<br>Fairy Queen (white and and gold)<br>Delilah (white and Carmine) | 15 in. |
| Amaranthus | Caudatus (Love-lies bleeding)<br>Tricolor (Joseph's Coat) | 24 in. |
| For Fall Background Masses and Corners | | |
| Ricinus (castor oil plants) | Mixed Varieties | 36 in. |
| Cosmos | Lady Lenox (shell pink)<br>Klondyke (orange colored)<br>Mammoth Perfection Varieties<br>Conchita (crimson)<br>Erlinda (white)<br>Rosita (pink) | 18 in., in sunny location |
| Salvia splendens (scarlet) | | 10 or 12 in. |
| Sunflower (Helianthus) | Double Chrysanthemum Flowered | 36 to 48 in. |
| Low Bedding Effects | | |
| Verbenas | Mammoth Rose Queen<br>Defiance (scarlet) | 10 or 15 in. each way |
| Clarkia | Double Rose<br>Double white | 12 in. May be grown in partial shade |
| *Phlox Drummondi* | Grandiflora alba<br>Grandiflora Chamois-Rose<br>Crimson<br>Isabellina (yellow)<br>Single bedding varieties | 12 in. |
| Petunias | Countess of Ellesmere<br>Howard's Star<br>White | 12 in. |
| VINES | | |
| For Urns and Vases | | |
| Climbing Nasturtium | Queen Wilhelmina, (rosy scarlet)<br>Crown Prince of Prussia (blood red)<br>Lucifer (dark scarlet)<br>Golden Queen | |
| *Erinus Lobelia* | Gracilis (blue)<br>Lindleyana (rose)<br>Kermesina (crimson)<br>Alba | |
| Walls, Trellis, or Arbor | | |
| Cypress vine | | Plant in open ground in warm spring weather 10 or 12 in. apart |
| Morning Glory | Coccinea (scarlet flowers)<br>Heavenly Blue<br>White<br>Japanese Morning Glories | Plant 2 feet apart |
| Sweet Peas (trellis only) | Spencer Varieties | Thin to 2 or 3 inches apart |

A satisfying mass which fills in well along hedge lines or which may be used along fences or to lend interest to a winding path is formed by planting summer cypress (Kochia) in rows, four rows deep, spacing the plants about twenty-four inches apart. A border of dusty miller or of sweet alyssum makes a fine contrast. The cypress foliage turns from light green to fiery red as the season advances.

### ANNUALS FOR SPECIFIC PURPOSES

Portulaca is very satisfactory if planted over a broad area in a dry location near a path. The seed should be sown quite thickly when the ground is warm in spring.

The following combinations of annuals are very pleasing in the given locations:

A bed below a terrace in a formal garden: Crimson snapdragon surrounded by sweet alyssum (Little Gem).

Long narrow beds (3 feet wide) above a sodded

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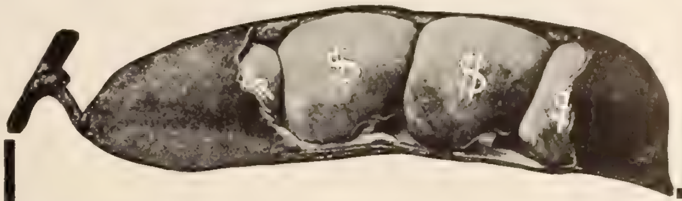

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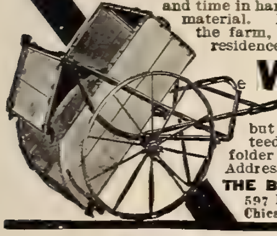

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Tender annuals, however, such as nasturtium, petunias, salvia, salpiglossis, cypress vine, morning glory, castor oil plant, portulaca, stocks, verbena, scabiosa or cosmos, balsam, ageratum or asters, must not be sown in the open ground until all danger of frost is past. For early effects these should be started indoors.

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LIKE all flower-lovers who visit England in the spring, I succumbed completely to the charm of the purple rock cress, or false wall cress (*Aubrietia deltoidea*), which I had never seen before. I usually look in vain for it in American gardens, though, so far as I can see, it is hardy enough. I bought one plant of the ordinary hue and despite the fact that it was weakened, spindling and yellowed by overmuch crowding under glass, it persisted in living even with a faulty location added to these adverse circumstances. Fearing that the chances of life were against it, I twice gave it too much shade. Its third location is in the sun, where it is flourishing and already has given me a number of cuttings. It may also be increased by separation. If you want 7,000 plants for spring bedding, as is the case at Belvoir Castle, seed is better yet. Sow it early so as to get strong plants before the cold weather sets. Hendersonii, Eyrei, Graeca, and Leichtlinii, the last a rosy carmine, are all good varieties. The plant is an evergreen, resembling closely in general growth *Arabis albida* but with much smaller foliage tufts. It is excellent for rockwork: in the border care should be taken to plant it a few inches above the level of the walk.

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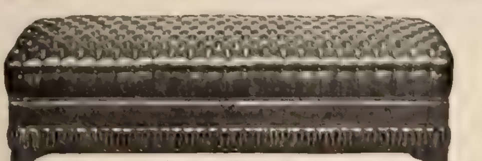

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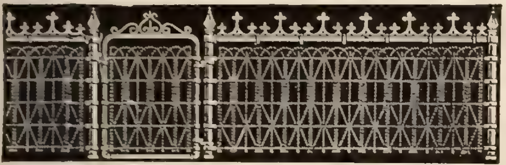

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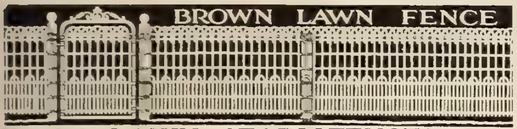

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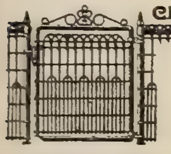

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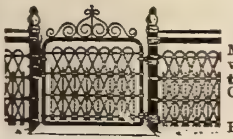

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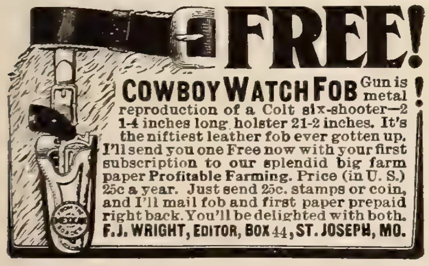

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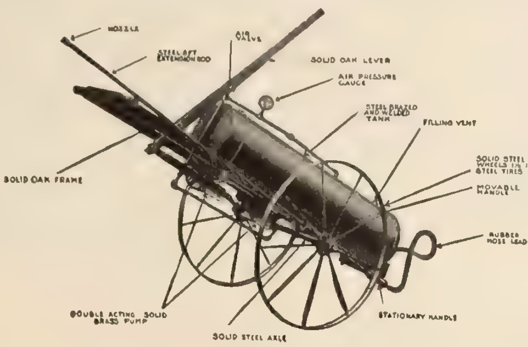

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Many are paying exorbitant prices for the choice Western-grown fruit when they have full-sized fruit trees on their own grounds. The remedy is simple. Adopt the same methods of culture and spraying and you will have just as good fruit as is produced in the West.

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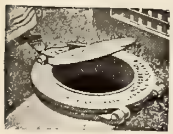

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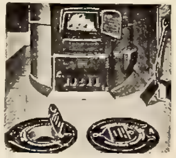

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VEGETABLES

## How I Grow Cucumbers

IT IS folly to try growing cucumbers on a clay soil. If you succeed in getting them at all, they will be misshapen or will scald and yellow badly. What this vegetable needs is a mealy, loamy soil, rich in humus and with as much additional plant food as it can hold.

When I grow cucumbers in my garden, I usually put two large shovelfuls of fine rotted manure in each hill and two handfuls of some good fertilizer, if I have no fish scrap or fish (usually obtainable in this locality).

In the language of an old farmer, the plants are great feeders. Plenty of old rotted manure, fish scraps or tankage, dried blood and bone meal are favored articles of diet to this voracious vegetable. The earliest and finest cucumbers I saw last season were grown upon moist, well-drained soil, each hill being surrounded by four fish buried to a depth of about six inches.

Here is a formula for a good fertilizer for cucumbers, and which can be used on the melons, peppers, squashes, beets, asparagus, and celery with equal advantage:

| | |
|---|---|
| Muriate of potash | 15 lbs. |
| Dried blood | 15 „ |
| Nitrate of soda | 10 „ |
| Sulphate of ammonia | 10 „ |
| Ground bone | 10 „ |
| Acid phosphate | 45 „ |

If more convenient one may use ten pounds more of the acid phosphate and omit the ground bone.

If the hill method of planting is used, five or six seeds in a hill is enough, having the hills about three feet apart. Do not put the seeds deeper than an inch or so. Another planting method used by farmers in the field and equally adaptable to the garden is to plant the seed about eighteen inches apart in rows three feet apart. It is better to drop two seeds in each place and, after the plants have their second leaves and are established, to cut out the superfluous ones with a small pair of scissors. Hill plants should be thinned down to three plants.

The proper planting time is in established spring weather. Frost will kill the young plants. However, south of New York, gardeners aim to get them in by May first, sometimes making another planting a few inches from the first four or five days later. If the first planting is successful it is but a few minutes' work to cut out the others with a hoe.

Young cucumber plants are easily effected by long cold storms at the time that they are just breaking through the ground. If possible protect with pieces of glass until the storm is over.

Almost as soon as the second leaves have grown and the tender centre of the plant is unfolding, the striped squash beetle will appear. It is a slender creature with stripes of black and yellow on its wings and perforates the leaves in a short time. It is impossible to poison them but the gardener can make their eating very inconvenient by sifting land plaster over the leaves especially about the tender parts of the plant. As the plants increase in size, their susceptibility to this pest diminishes.

When the vines are large enough to run, an application of nitrate of soda is a good stimulant. A tablespoonful on the surface of the ground about each plant is enough. It must not touch the stem or foliage nor be in such quantity that a shower

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GLOUCESTER
BED HAMMOCK

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When you buy a bed hammock for your veranda this summer, be sure it is sightly and comfortable, but above all be sure that it is made to last. Cheap imitations soon look delapidated and unattractive, because they lack the material and skill in making so necessary to service and lasting comfort.

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Write for catalog and name of dealer nearest you. If you are not so located as to deal conveniently with the dealer, we will supply you direct. Before you buy a hammock, be sure to see ours or send for illustrated book and prices

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**NO HOLES TO DIG. THE SOCKETS ARE EASILY DRIVEN. THE ADJUSTABLE HOOK MAKES CLOTHES HANGING EASY.**

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but he does hate the drudgery of it. Don't keep on with that idea of garden work, but find out, at once, all you can about the tools shown in the engravings.

Write for copy of Iron Age Farm & Garden News and read other men's experiences with these tools, how they became really interested in growing things with the help of the Creator and

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They hoe, cultivate, weed, level, open furrows and cover them, plow in many soils, sow seed accurately in continuous rows or in hills at any distance apart. Mark the next row, and so on. All in an upright position. Women and children work them as well as men (if the men give them a chance). There are 38 or more combinations to choose from, at prices ranging from $2.50 to $12.00. The simplest forms build up into complete machines. One year's use in a fair sized garden will pay for any of the tools in several ways.

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A book that tells plainly and briefly what everyone who grows vegetables wants to know.

**Vegetable Gardening**
**By R. L. Watts**
**Professor of Horticulture, Pennsylvania State College**

This complete, concise and authentic book covers every phase of vegetable gardening. It is equally valuable as a text-book and as a hand-book for practical growers. The author's experience as a teacher and practical market gardener has admirably fitted him to present this matter in a popular style. The book brings up to date the reliable information on vegetable gardening, and the full discussion of principles makes it valuable to all classes of growers whether they are producing for the home table or for market. To procure first-hand knowledge regarding varieties and methods, many market gardens and truck farms were visited in different parts of the United States.

An idea of the scope may be gained by noting the following subjects: Selection of Location, Soils, Tillage, and Tillage Tools, Stable Manures, Green Manures and Clover Crops, Commercial Fertilizers, Irrigation, Insect Enemies and Fungous Diseases, Seeds and Seed Growing, Construction of Hotbeds, Construction of Cold Frames, Construction of Greenhouses, Seed Sowing, Transplanting, Growing Early Vegetable Plants Under Glass, Marketing, Coöperative Associations, The Storage of Vegetables, and the Classification of Vegetables.

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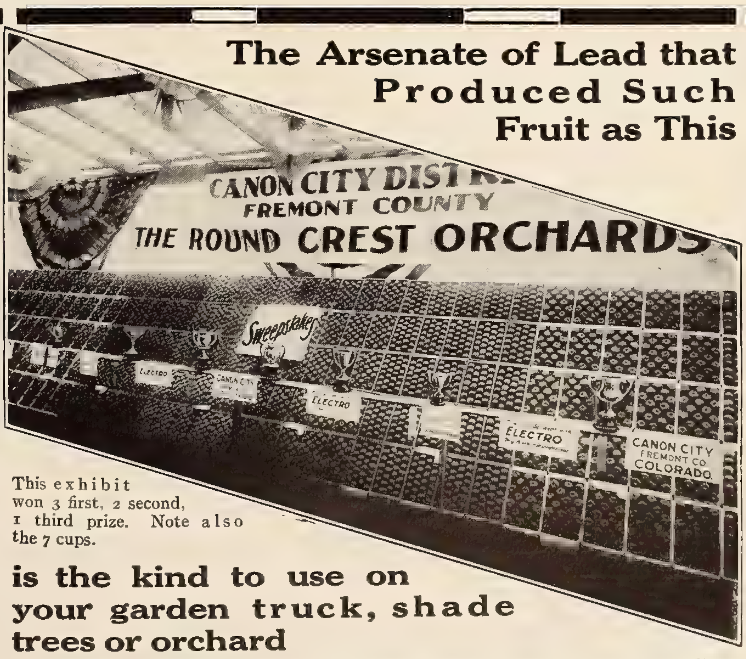

This exhibit won 3 first, 2 second, 1 third prize. Note also the 7 cups.

**is the kind to use on your garden truck, shade trees or orchard**

Growing perfect fruit or beautiful shade trees means guarding them against insect enemies. Protect yours, no matter how few you have. The Company whose exhibit is pictured above, depends for protection on

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will wash it over the plants as it will surely yellow and kill them.

Lousy plants snould be burned at once or washed in an infusion of tobacco stems. Plants badly affected are rarely profitable even though they survive.

Cucumbers require regular, even cultivation but when they have begun blooming it is wiser to disturb the plants very little when working about the hill. A rather unusual garden implement but one especially useful in this case is a long-handled scraper such as is used about the fireplace. By lifting the vines carefully and drawing this over the surface of the soil about the hill each week, weeds will be prevented from gaining a foothold.

Overgrown cucumbers should not remain upon the vines as their growth and ripening will check the vines' bearing.

The everbearing and the White Spine varieties are general garden favorites, being crisp, tender and prolific.

New Jersey. M. Roberts Conover.

## A Short Season for Tomatoes

After having made repeated efforts with growing tomatoes, I decided that the only thing to do in this climate (northern Minnesota) was to try and get on the vines as many large tomatoes as possible, and pick them just before the fatal frost which comes here about August 22d.

Tomato culture with me therefore, begins in March in the house. My problem is how to hurry the plants along, and get enough fruit to pay for the time and labor expended.

We have frosts in June; tomatoes cannot be set out in the garden until June first at the very earliest, but by careful handling of young plants in the house we can have them in bloom by that time.

Last summer I planted fifteen hills of a very indifferent grade of tomatoes in hills about two feet apart both ways. The soil was very poor, so I dug out the hills and filled in with made soil, which was quite rich. In these hills the tomatoes were planted, and when they began to lag, I took quart tin cans (such as we get canned tomatoes in) made an opening as large as a half a dollar in the bottom, and removed the tops entirely. These cans I filled half full of the richest barn yard manure I could find, and sunk them into the ground about half their depth, one beside each tomato plant. When I watered the plants, I poured the water into these cans, and it filtered through the manure and carried the nourishment down to the roots. The summer was very dry, and I would have had to carry an immense amount of water if it had been applied in the usual way: but by giving it in the manner stated, every drop reached the roots and carried food with it.

From fifteen hills of this very commonplace variety, we picked two bushels of green tomatoes, of all sizes, many four inches in diameter, which ripened in the cellar.

Minnesota. George E. Wolfe.

## Raising Early Cauliflower

In making the change from city life to farming, if it is important rhat the farm yield a profit, one of the most important things to learn is the demand of the local market. Experience is the only sure method of mastering this lesson.

We had had some little success anticipating the market on early peas. If early peas and summer squashes bring a special price, we thought, why not early cauliflower?

We bought fancy seed, raised them in our hotbed, and in due time transplanted them into the open garden. Last spring cutworms were more than usually active. To prevent loss from this pest, around each plant as we transplanted it we put a collar. For this purpose we used heavy paper—fourteen inches by four and a half—which we had bought to make paper pots. We pinned the ends of the paper together with ordinary pins and placed this circular collar around the plant, putting about two and a half inches below the surface of the ground. We did not lose a single plant from the cutworms.

The season was dry. With my own hands I

# I Stand for Saner, Happier Living, and More Prosperity

Certain elements in modern life make people old before their time. Making a living or keeping up the business pace has been likened to a huge monster which consumes great numbers of us every year. City folks, and those in lines of trade are worn out the quickest, but farmers have their struggles, too.

## You can get away from the Rush and Struggle

Wherever you live, whatever you do, you can leave this condition behind. The nightmare of rush and struggle does not follow those who get back to the soil ***and practice intensive cultivation growing berries.*** With five acres you can be independent, with twice that or more you can become rich; or with one or two acres you can find relaxation, and ***re-create*** what the monster already has consumed.

It seems to me that the solutions of the high cost of living problem, the health problem, the independence problem, the ***effective recreation*** problem all lie in planting more berry farms. In growing berries there's money to be made, there's health and enjoyment to be had, and there's work you can be proud of. You don't need to go far away, you don't have to cut loose entirely from your other work.

## Learn the Facts from My Many Years of Study

I've studied this situation for a good many years; I have been producing and testing berries of every kind; the results are summed up in the Berrydale Berry Book for this year. In it I've told what are the best berries to plant; have described among others, the Himalaya Berry, that perennial resembling blackberries, but bearing fruit on old and new wood like a fruit tree. This description and the talk on a five-acre berry farm are worth getting. The book is free. Send ***your*** address now, before you lose ***my*** address.

**A. MITTING, Manager**
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One of my customers describes Farr's Iris "Wyomissing" as "blooming in every fairy color"—a happy phrase and an ideal description. Wyomissing Nurseries *are* a veritable fairyland to me—an enchanted spot wherein I constantly find new joys and where life, to me and to my dear ones takes on new brightness and glory every day as new flower-wonders unfold

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and convert you to a more passionate love for the growing things. This book will help you make "fairyland" of your own garden. I shall be glad to send you a copy.

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**Have you a dark or shady corner in your garden?**

# Tuberous Rooted Begonias

will flourish there and brighten it with a gorgeous glow of bloom all through Summer and far into Autumn. If you want EARLY FLOWERS start the bulbs *now in the house in moss fibre.*

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**"Full directions how to start Begonias in the house"**

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| **Single flowering** in separate colors. White, rose, scarlet, apple blossom, yellow, orange, salmon | .06 | .50 | 4.00 |
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## Rare Sorts of Begonias

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| The exquisite **Butterfly Begonia.** Colors scarlet, orange, pink spotted white | .15 | 1.50 | 10.00 |
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Begonias do equally well in open sunshine.

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# Field's Early June Tomato

Earlier by a week than standard early kinds; as smooth and handsome as the best; as solid and seedless as the latest improved varieties; more prolific than the heaviest yielder I know of. My seed is produced by the originator—is absolutely pure and all will grow. Field varieties and Field Seeds are uniformly of the very highest quality. I grow my seeds so I *know* they are pure. I test them for germination, so I can absolutely guarantee them to grow.

## I want you to get some "Field" Experience this Year

I've told you how we do things, along with much general seed information, in my 1912 Annual Catalog. It describes Early June Tomato at length, gives the facts just as though you and I were here talking, with a field of them before us. Corn, cabbage, potatoes, onions, and other seeds are talked of in the same way. It is a book worth having. I've put my best into it, just as I do into my seeds. Get your copy early by sending me your name and address in tomorrow's mail.

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LANGPORT ENGLAND

This is the Kelway Book which every Garden lover should write for to-day *free*.

watered those cauliflower plants and brought them to heads — some of them — by the middle of July. With pride we offered them for sale. To our amazement, "It was too early for cauliflower," every one said.

We sold a few for the summer boarders. We bartered with the city people who summer at the top of the hill, taking in exchange some vegetables on which we had failed. We gave a few to our automobile visitors. Our own table was bountifully supplied, but to us it did not look like a money-making venture. Meantime some of the plants were passing.

Suddenly, about the middle of September, we were fairly deluged with orders for cauliflower. The butcher, the grocer, the blacksmith's wife, the laundress, and the farmers' wives all wanted cauliflower. A few inquiries solved the mystery. Every body for miles around used "one large cauliflower" in making mixed mustard pickles.

We could not begin to supply the demand, but we can this year, rain and sunshine permitting. And more, we will plan to have the plants mature first when the thoughts of the thrifty housewives are turning toward the making of pickles.

New Hampshire. M. W. P.

## Sweet Peas that are Worth While

WE LIVE in a locality where the growing season is so short that many people fail with sweet peas. I prepare a bed for sweet peas during September, all flowers and vegetation being dead by that time. I rarely use the same ground for two successive crops of sweet peas; but if it is necessary to do so, I take out as much of the old soil as possible, replacing it with the best soil I can get, mixed with well-rotted cow manure.

The bed is deeply spaded, highly fertilized (about one half manure) and then leveled down until the top is about one inch lower than the surrounding surface. I buy the best seeds I can get and never plant mixtures. I always buy the colors separate, and thus avoid any possible disagreeable clashes. The colors selected are, of course, a matter of taste.

On March 1st, sometimes even before the snow disappears, I take a shovel and uncover the prepared bed. This is done on a comparatively warm day, and by night the bed is soft mud to a depth of three inches. Just before sunset I scrape the mud to one side and put in my seeds — about three to an inch, and in the case of white-seeded varieties, even thicker. Then the mud is piled back on the seeds and the snow shoveled back on to the bed. The whole thing freezes up tight, and remains that way till spring comes in earnest. The snow goes; the peas come up and blossom two weeks earlier than my neighbor's, which are planted in the spring when the soil gets dry enough to work.

Five-foot poultry netting as a support is put in place as soon as the peas come up, and the plants are trained at once to cling to it. When the plants are about a foot high, I take as much soil as possible from the top of the bed, without exposing the roots of the plants, and bank up the row with well rotted manure. The rain sinks down through this and all the water is applied on top of it, and the peas make a marvelous growth. We often have stems a foot long with four blossoms on them (each blossom larger than a quarter) while stems with fewer blossoms than three are cut off as failures.

Daily picking is very important. I practice close picking, and often take quite a length of the plant with the stem. This is a kind of pruning that seems to please and encourage the plant.

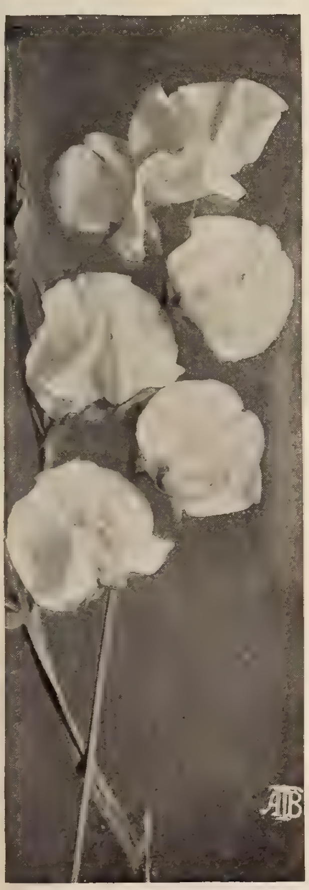
Minnesota. GEORGE E. WOLFE.

## The Newest Balsam

ONE of the latest of the flower novelties of which South Africa appears to have an indefinite supply is a balsam, called *Impatiens Oliveri*. The plant has the stocky form of the common garden balsam, but the single blossoms are like those of the Sultan's balsam, only larger. The blossoms are shell pink in color. Though, naturally, much less showy than the red shades of *I. Sultani*, this new balsam makes a very desirable pot plant, for either summer or winter blooming. In the garden it will find its chief usefulness in lending formality to the planting of annuals

Connecticut. B. G.

# It's high time you got your heads together and selected your Boddington Quality Seeds



Don't grow "just Sweet Peas", get some of Boddington's Gigantic Orchid Flowered varieties. See special offer.

ONE of the keen joys of gardening is to plan your garden far enough ahead so you can browse through the catalogs and select and talk over the seeds you are going to grow. An evening so spent is a pretty sure preventative against wishing, when too late, that you had bought **Boddington's** seeds (our $5000 prize winning Sweet Peas, for example). It might also save you from chiding yourself for taking up so much space in your garden with over praised novelties that didn't tally up to some catalog's too glowing descriptions and promises.

In short — snap-shot gardening is bad gardening.

So try our way this year by getting

## Boddington's Garden Guide

now, and doing the first half of your successful gardening on paper.

It's the sure way of having the last half genuinely satisfactory.

Besides the regular "Quality" assortment of flowers and vegetables listed, this *Garden Guide* contains some expert growing hints that you will enjoy comparing with your own experience and agreeing or perhaps disagreeing with. Then there are some 10 or 12 pages of "new things"— the latest novelties produced in either this country or England. You will want to know all about these and be among the first to try some. Boddington's 1912 Garden Guide is mailed free on request.

By way of suggestion, here are three specials, one or all of which you will surely want.

**$5000 Prize Sweet Pea Quartet.**

Paradise Carmine — clear, lovely carmine, waved.
Constance Oliver — delicate pink, suffused with cream waved.
Arthur Unwin — rose, shaded with cream, waved.
Tom Bolton — dark maroon, waved.

Collection of the above four prize winners, postpaid, **for 35c, or three collections for $1.00.**

**Annual Collection.**

| | per package | |
|---|---|---|
| Pansy — Boddington's Challenge - - - | value | 25c |
| Aster — (Novelty Single) Southcote Beauty | " | 25c |
| Larkspur — Boddington's Scarlet Defiance | " | 25c |
| Zinnia — Boddington's Dwarf Double - - | " | 10c |
| Mignonette — Large, Sweet scented - - - | " | 5c |
| Nigella — Miss Jekyll - - - - - - - - | " | 10c |
| | " | $1.00 |

**Special Price — the above six varieties for 50c, postpaid.**

**A quarter of a pound of gigantic Orchid Flowering mixed Sweet Peas for a Quarter.**

This quarter of a pound of Sweet Peas (mailed free), contains the finest mixture of the Spencer varieties ever sent out by a seed house. The range of color is from pure white to darkest crimson, and all intermediate shades.

Let us introduce to you our charming friend Miss Jekyll Nigella, a member of the Love-in-a-mist family. If you are fond of flowers of corn flower blue color, you will thank us for getting you acquainted with this graceful annual. See special offer.

***We will send you the above three collections postpaid, for $1.00***

# Boddington's Seeds

**Arthur T. Boddington** **340 West 14th Street, N. Y.**

The Seeds with a Pedigree. The result of a Century's experience in crossbreeding and selection. ✤ ✤

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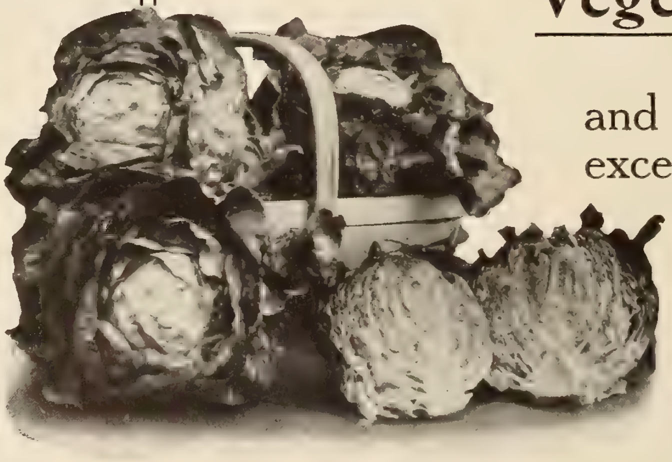
ENGLISH

SEEDS

FOR American Gardens

**Flowers** that have made England's Gardens famous throughout the world.

**Vegetables** that are renowned both in England and abroad for their delicious flavour and excellent exhibition qualities. . . . .



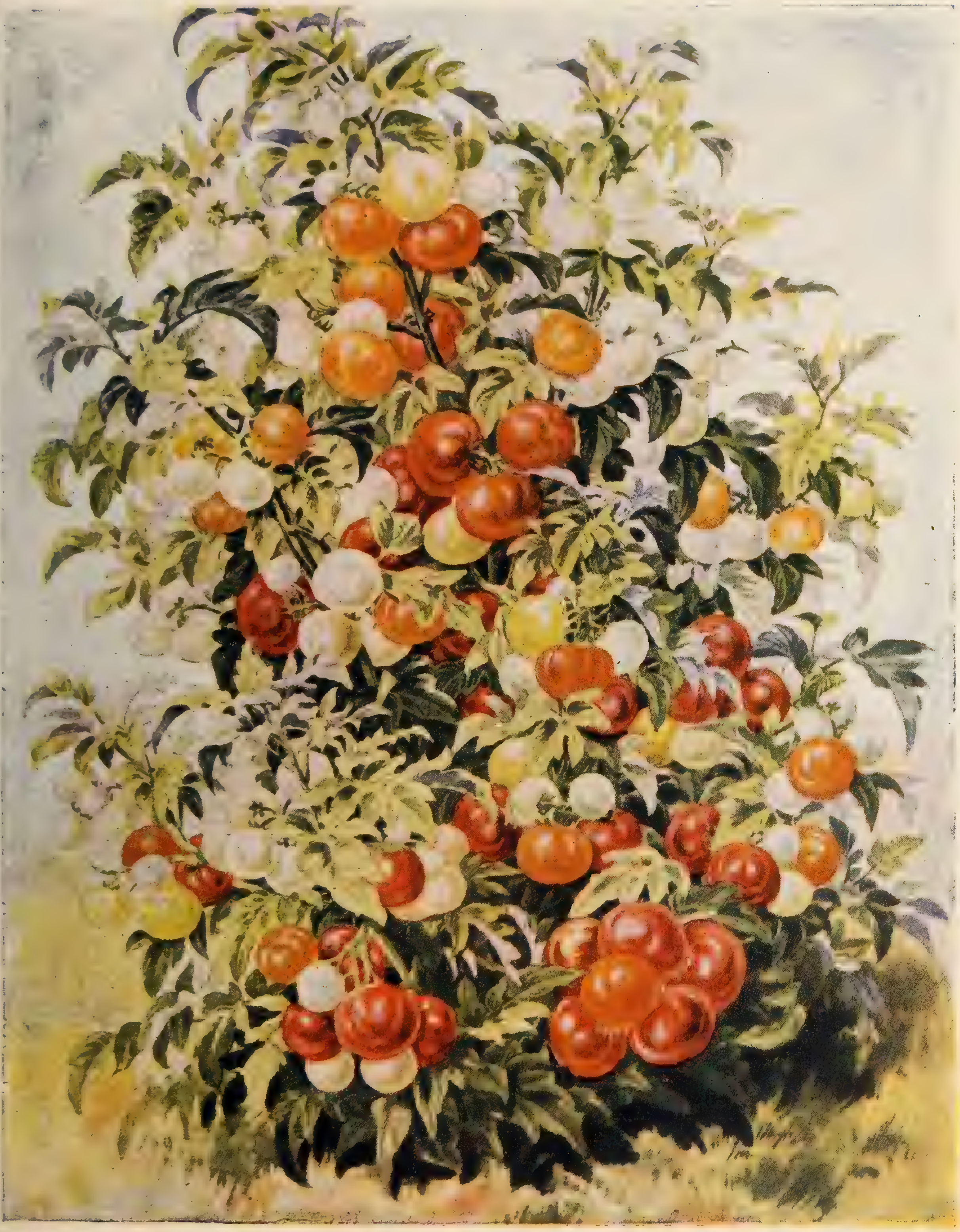
Complete lists of all the best varieties will be found in SUTTON'S GARDEN SEED CATALOGUE for 1912.

*Those who have not received the current number of this publication should write at once for a copy.*

Seeds despatched from Reading by return mail. Customers should receive consignments in three weeks from date of mailing order.

SUTTON & SONS, Seedsmen to H. M. King George V Reading, England

# CHILDS' RESPLENDENT TOMATO



## OTHER GREAT NOVELTIES

OUR CATALOGUE for 1912 (mailed free to all who apply) of Flower and Vegetable seeds, Bulbs, Plants and rare new Fruits, contains many Novelties fully as wonderful as our Resplendent Tomato. Among them are:

### CHILDS' SPECTACULAR ROSE

The most novel and beautiful Rose ever introduced; a sport from Killarney. The magnificent large blossoms being striped and variegated white and brilliant pink. Nothing like it ever before seen. 60c. each.

### COCKATOO DAHLIA

A large double Cactus Dahlia bearing scores of blossoms, all of different colors: white, bronze, lemon, pink, crimson, variegated, etc. Novel and showy, 25c. each, 3 for 60c.

### PERPETUAL BLOOMING CHRYSANTHEMUM

A genuine perpetual bloomer, large double golden-yellow flowers in profusion at all times of the year. Has received a certificate of merit from the New York Horticultural Society, where it has been shown every month in the year. 25c. each, 3 for 60c.

### CANNA, EXTRA-EARLY DWARF

*Flowers in three months from seed*

These wonderful Cannas, dwarf and compact in growth, with highly ornamental foliage, produce their magnificent clusters of brilliant blossoms all summer and fall from spring-sown seed. Pkt. 10c., 3 for 25c.

### CELOSIA, CASTLE GOULD

Most showy garden annual ever grown. Seed 20c. per pkt.

### FULLMOON ASTER

Enormous double white. Largest and finest of Asters. Seed 20c. per pkt.

### GOLDEN CREAM SWEET CORN

Newest and best of all Sweet Corns. 10c. per pkt.

Also many new Cannas, Gladioli, Geraniums, Carnations, Ferns, Lilies, Sweet Peas, Pansies, Melons, Strawberries, Shrubs, Vines, etc. Our Flower and Vegetable seeds are all special high-grade stocks.

### UNIVERSAL COUPONS

In addition to many other liberal premiums and discounts offered in our Catalogue, we give five Universal Premium Coupons with every 50c. worth of goods we sell.

## Most Novel and Most Beautiful of All Tomatoes

Fruit of many colors, from light green to white, lemon, pink, orange and yellow to deep ruby-red, borne on the same plant at the same time in wonderful abundance. A plant in fruit is strikingly beautiful beyond description. Fruit large, very solid with less seed and seed cavity than any other Tomato, consequently less acid, and by far the richest, meatiest and best-flavored Tomato that we have ever tasted. Plant of stout, upright branching growth (of the tree form) with distinct wide Potato-like foliage, of a deep emerald-green. In growth and foliage it is as novel as is its marvelous fruit and entirely unlike any other variety.

We are introducing Resplendent as the best and most beautiful Tomato, novel and distinct in every way, at only **10c. PER PKT., 3 PKTS. FOR 25c.**

With each packet of seed we mail a booklet which tells how to grow and use Tomatoes. 100 Receipts for cooking and using the fruit are given, many entirely new. Also Catalogue with large water-color reproduction of a Resplendent plant in full bearing.

*WRITE NOW; THIS AD. WILL NOT APPEAR AGAIN*

*Address* **JOHN LEWIS CHILDS, Floral Park, N. Y.**

# Burpee-Quality Vegetables

## "Four of the Finest"

### For 25 Cents

### 63 The "Burpee-Improved" Bush Lima.

A Distinct "New Creation," the Largest and Best of All Bush Lima Beans!

REGISTERED
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"THE SEAL OF QUALITY."

It differs from the best strains of *Burpee's Bush Lima* in having uniformly much larger pods, producing more beans, while both pods and beans are not only larger in size but also considerably *thicker.* The growth is even more vigorous, with heaver foliage. The plants are uniformly upright. Even when of full size the enormous beans are of the most luscious flavor; they are thin skinned and truly *delicious;* they are ready to market *eight to ten days earlier.* **Per pkt. 15 cts.; ½ pint 25 cts.; pint 40 cts.,** postpaid. By express or freight: **per pint 30 cts.; quart 50 cts.; 2 quarts 90 cts.; per peck $3.00.**

### 301 Sweet Corn — Burpee's Golden Bantam.

First introduced (*exclusively by us*) just ten years ago (in 1902), this is *the sweetest in flavor and most popular first-early sweet corn in cultivation to-day.* Its hardy character allows the seed to be planted earlier than any white-seeded sweet corn, so that it gives the earliest ears possible to produce. For full description,— *see page 17 of* Burpee's Annual for 1912, *and see ear painted from nature.* **Per pkt. 15 cts.; ½ pint 20 cts.; per pint 30 cts.,** postpaid. By express: **Per pint 20 cts.; quart 35 cts.; 2 quarts for 60 cts.; 4 quarts for $1.10; peck $2.00.**

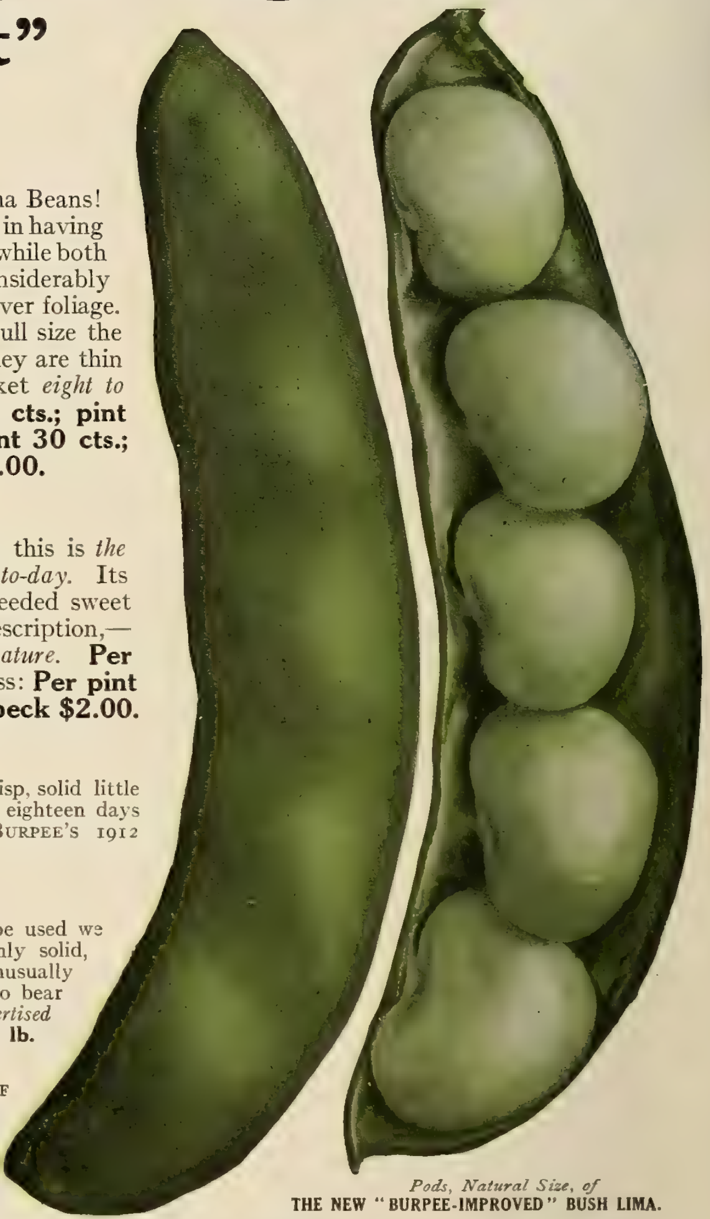
### 878 Radish,— Burpee's "Rapid Red."

The *quickest growing* of all the "cherry-stone" red radishes. Deliciously crisp, solid little radishes, three-fourths of an inch in diameter; are ready to eat from fourteen to eighteen days from the time the seed is sown. *See colored plate* and full description in Burpee's 1912 Annual. **Per pkt. 10 cts.; oz. 15 cts.; ¼ lb. 40 cts.; per lb. $1.25.**

### 1101 Tomato,—Chalk's Early Jewel.

If asked "*which is the best tomato for family garden*" where only one is to be used we should answer Chalk's Early Jewel. The reasons are: It produces uniformly solid, smooth, bright scarlet tomatoes of good size and sweet, rich flavor, beginning unusually early (within a week or ten days as early as *Spark's Earliana*), and continues to bear a splendid crop throughout the season. *See page 89 of* The Burpee Annual *advertised below.* Fordhook-Grown Seed: **Per pkt. 10 cts.; ½ oz. 25 cts.; per oz. 40 cts.; ¼ lb. $1.10; per pound $4.00.**

**For 25 cts.** we will mail one regular sized packet each of the above "Four of the Finest." Purchased separately these four packets would cost just 50 cts. It is our desire that every one who has a garden should have these "*Four of the Finest*" *Extra-Early Vegetables*, and can well afford to make this special offer to extend the popularity of these most justly Famous Fordhook Favorites.



*Pods, Natural Size, of*
THE NEW "BURPEE-IMPROVED" BUSH LIMA.

## Burpee's Annual for 1912

### "The Leading American Seed Catalog"

will be sent immediately upon application (a postal card will do) to every one who appreciates Quality in Seeds.

This Silent Salesman (and we employ no "talking" salesmen to solicit orders) tells the plain truth about The Best Seeds That Can Be Grown. Besides colored plates of Burpee-Specialties, this bright book of 178 pages shows hundreds of the choicest vegetables and most beautiful flowers, illustrated from photographs. It is almost indispensable to all who garden, either for pleasure or profit.

The "House of Burpee" is known the world over not only as Experts in Sweet Peas, but also as Seed Specialists. No other American firm has ever introduced so many novelties of sterling value,— and no other growers supply seeds annually direct to so many planters. It might be to your interest to read The Burpee Annual. It will cost you only one cent for a post card to send us your address, and you are under no obligation to buy. We never annoy applicants with "follow up" letters.

Shall we mail **you** a copy? If so, kindly **write to-day.**

## SWEET PEAS

### Six Superb Spencers

**For 25 cts.** we will mail one regular packet each of Florence Nightingale, the largest and best lavender;— Constance Oliver, rich rose pink on cream; — Marie Corelli, beautiful brilliant rose; — Primrose Spencer, the best primrose; — Senator Spencer, claret flaked on heliotrope; — and W. T. Hutchins, apricot overlaid with blush pink. The Six Superb Spencers are shown painted from nature on pages 109 and 110 of Burpee's Annual for 1912. Purchased separately they would cost 65 cts., but all six packets, with leaflet on culture, will be mailed for **only 25 cts.; five collections for $1.00.**

**W. ATLEE BURPEE & CO., Burpee Buildings, Philadelphia**

THE COUNTRY LIFE PRESS, GARDEN CITY, NEW YORK

APRIL
1912
Vol. XV. No. 3

## Spring Planting Number

Native Shrubs and How to Use Them
Little Backyard Gardens
Perennials That Are Really Hardy
Dwarf Fruit Trees
*Planting Your Own Vine and Fig Tree*—By Frances Duncan

Special Double Number
25c.
$1.50 a Year

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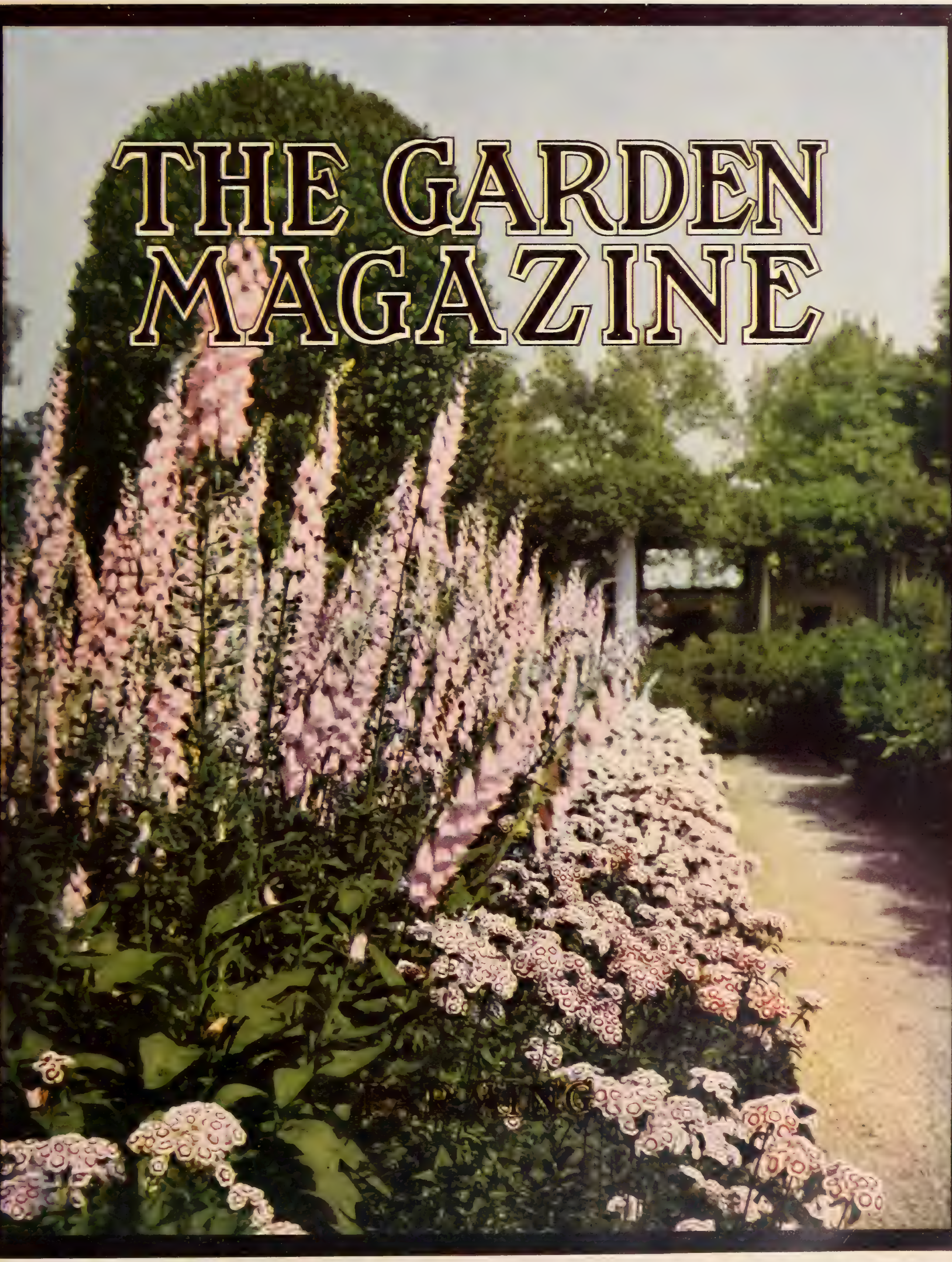

COUNTRY LIFE IN AMERICA
DOUBLEDAY, PAGE & CO.
Chicago GARDEN CITY, N. Y. New York
THE WORLD'S WORK

# BOBBINK & ATKINS

# New Hybrid Giant-Flowering Marshmallow

**HIBISCUS.** The old Greek name for Marshmallow used by Dioscorides, the famous Greek physician and botanist living about the year 100 A.D. The Marshmallow, or Rose Mallow (as it is sometimes called), has been known ever since the discovery of America and has always been admired by all lovers of flowers. But it was not until a few years ago that we conceived the idea of improving this old-fashioned hardy plant and began to carefully study the possibilities of creating an entirely new family of Hibiscus, and those who have seen our plants in flower know how well we have succeeded, as many days last Summer we estimated that not less than one hundred-thousand flowers were open at one time.

The first year we hybridized several thousand flowers and produced some very wonderful Hybrids. Since that time we have constantly improved the original Hybrid until now, we believe, we have them at the highest state of perfection, many flowers measuring 10-12 inches in diameter and varying in color from the purest white to the darkest crimson.

We can highly recommend our New Giant-Flowering Marshmallow for all kinds of plantings; they appear to be perfectly at home in every kind of position, growing with the same amount of vigor and health in swampy or dry places. They are perfectly hardy and well adapted for naturalizing or back-ground effects and for growing as individual specimens, suitable for lawn and other planting effects; for grouping in the border and along the edge of shrubbery. One can produce wonderful effects for screening and in sub-tropical plantings, as they are more vigorous than the type. For planting near streams, ponds and lakes they produce wonderful effects with their large, handsome flowers and foliage.

Their average height is five to eight feet. They are very floriferous and bloom from the beginning of July until late Autumn.

**Red, Pink and White, 3 year old plants**
**Each $1.00 $10.00 per doz. $50.00 per 100**
**Red, Pink and White, 2 year old plants**
**Each 75c. $7.50 per doz. $35.00 per 100**

A flower of our New Hybrid Marshmallow, about ½ the size

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### World's Choicest Nursery and Greenhouse Products

### SPRING PLANTING

We invite everybody interested in improving their lawns and gardens to visit our Nursery to see our Products growing. This is the most satisfactory way to purchase. We shall gladly give our time, attention and any information desired. Our Nursery consists of 300 acres of highly cultivated land, and 500,000 square feet of Greenhouses and storehouses, in which we are growing Nursery and Greenhouse Products for every place and purpose, the best that experience, good cultivation and our excellent facilities can produce, placing us in a position to fill orders of any size.

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**ENGLISH POT-GROWN GRAPE VINES.** For greenhouse cultivation.

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**LAWN GRASS SEED.** Our Rutherford Park Lawn Mixture has given satisfaction everywhere.

**PLANT TUBS, WINDOW BOXES AND GARDEN FURNITURE.** We manufacture all shapes and sizes.

**OUR ILLUSTRATED GENERAL CATALOGUE NO. 25,** describes our Products; is comprehensive, interesting, instructive and helpful to intending purchasers. Will be mailed free upon request.

### We Plan and Plant Grounds and Gardens Everywhere

**OUR PRODUCTS** give permanent satisfaction because they possess the highest qualities created by our excellent standard of cultivation.

**VISITORS,** take Erie Railroad to Carlton Hill, second stop on Main Line, 3 minutes' walk to Nursery.

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**Nurserymen, Florists and Planters** **RUTHERFORD, N. J.**

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**Victor-Victrola XVI, $200**
Mahogany or quartered oak

## Every home should have a Victor-Victrola

**because**

this instrument satisfies the love of music that is born in every one of us; touches the heart strings and develops the emotional part of our nature; freshens the tired mind and lightens the cares and worries of everyday life.

**because**

the Victor-Victrola brings to you the best music of all the world and gives you a complete understanding of the masterpieces of the great composers such as you can acquire in no other way.

**because**

the Victor-Victrola places at your command the services of the world's greatest opera stars, who make records exclusively for the Victor, besides a host of famous instrumentalists, celebrated bands and orchestras and well-known comedians and entertainers.

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Oak

**because**

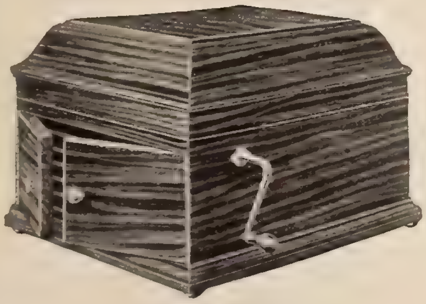
the Victor-Victrola is universally recognized as the world's greatest musical instrument, occupies a place of honor in homes of wealth and culture everywhere, and has awakened millions to a proper appreciation of music.

**because**

with Victor-Victrolas, ranging in prices from $15 to $200 and Victors from $10 to $100, no home can afford to be without one of these wonderful instruments.

**because**

any Victor dealer in any city in the world will gladly play any music you wish to hear and demonstrate to you the Victor-Victrola.



**Victor-Victrola IX, $50**
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**Victor Talking Machine Co., Camden, N. J. U. S. A.**
Berliner Gramophone Co., Montreal, Canadian Distributors

Always use Victor Records played with Victor Needles—there is no other way to get the unequalled Victor tone.

Victor Steel Needles, 6 cents per 100
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Victor
"HIS MASTER'S VOICE"
REG. U.S. PAT. OFF.

New Victor Records are on sale at all dealers on the 28th of each month

**Good Prices Are Just as Important as —Good— Crops**

TO get good prices you must deliver your crop when it is prime. Often you can't do it with your horse and wagon system of hauling to railway station or dock. Owing to the time it takes on the road with a team, you haul to the nearest market. Frequently you are compelled to use your team in the field, delaying fruit shipments, losing money by "spoilage." You must travel the rough roads for tiresome, valuable hours. Why not haul to the town where you can get the biggest price? Why not get fruit there in one third the time? Why not keep your team in the field instead of spoiling them by road work. The

**International Auto Wagon**

has solved the problem for fruit growers and gardeners. It is always ready, summer or winter, regardless of roads or weather, to take you anywhere. It's simple enough for your wife or boy to drive.

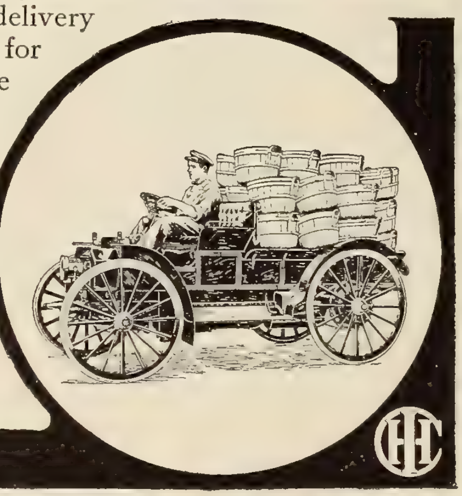
It will make three times as many trips as a horse, in the same time.

The International Auto Wagon will do all your road work in less time and at less cost than it can be done with a horse-drawn delivery

The International Auto Wagon is built for hard service. The wheels are high enough to give ample road clearance; the tires are solid rubber—preventing delays from punctures and blowouts; the engine is air-cooled—it does not freeze in winter.

Whenever desired, the International Auto Wagon can be converted into a two-seated pleasure vehicle by adding a rear seat and top.

Investigate the International. Write for facts and figures to show what it is doing for others.



**International Harvester Company of America**
144 Harvester Building (Incorporated) Chicago U S A

The Readers' Service gives information about gardening

The Readers' Service gives information about Real Estate

**Plant a Privet Hedge**

It will give your place a finished appearance and add value as well as beauty to your home. I am making this very low special price to my customers and their friends for immediate orders.

**For 9 Cents per Yard**

I will sell you enough California Privet plants, (two-year heavily rooted stock) to go around your place, planted six inches apart, packed and delivered to Railroad Station at Salisbury, Md.

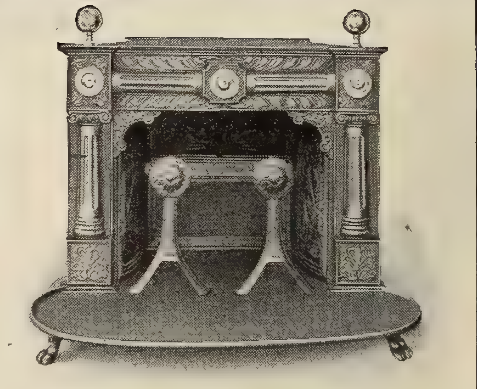
**Only 9 Cents per Yard and No Charge for Packing**

If you order $5.00 worth or more of Privet at above rate and mention Garden Magazine, I will add free of charge

**2 Spirea Van Houttei, 2 Weigela, 2 Mock Orange**

Order today; this stock should be planted early.

**W. F. ALLEN,** 54 MARKET STREET, SALISBURY, MD.



**Colonial Franklin Fire Places**

May be used for wood or coal.
Easily installed and made to last.
Every home needs one, it makes a home more homelike.

**Brass Balls and Rosettes Grate or Andiron**

**Janes & Kirtland**
725 6th Avenue, N. Y.
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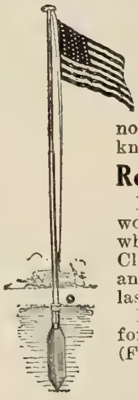
**Removable FLAG STAFFS**



Twenty feet above ground. Made in three pieces of high carbon steel tubing filled with cement. Easily removed and housed. The sockets are permanent and driven level with the ground. This requires no skill. Same principle as the well known

**Removable Steel Clothes Posts**

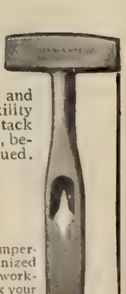
Don't disfigure your lawn with wooden poles or posts that soon decay, when you can buy Steel Flag-Staffs or Clothes Posts that are both ornamental and removable, cost much less and last a lifetime.

If your dealer hasn't them write us for full particulars about Flag-Staffs (Folder B) or Clothes Posts (Folder A).

**MILWAUKEE STEEL POST CO.**
Milwaukee, Wis.

Are you interested in
**Hardy Northern Grown Evergreens**
and deciduous Trees and Shrubs that will grow?
Let us send you our illustrated catalogue.
**T. C. THURLOW'S SONS, Inc.**
West Newbury, Mass.

**"Handy as a Pocket in a Shirt"**



Everybody has to "pry into things" occasionally, and when they do, they need Bonner's Household Utility Tool to help. This has the combined virtues of a tack hammer, nail puller, crate opener and ice pick; and, besides, does a score of odd jobs that can't be catalogued.

**BONNER**
**HOUSEHOLD UTILITY TOOL**

is a sturdy little helper, of fine quality steel and well tempered. Drop forged and nickel plated. Every well organized household needs one. Handy in an office, necessary in a worker's kit. Sizes: 7½ inches at 50c and 9 inches at 75c. Ask your dealer and don't be turned off with a "just as good." If not with him, send us his name and we will ship tool prepaid, upon receipt of price.

**C. E. BONNER MFG. CO.** Champaign, Ill.
*Also makers of Bonner "Victor" Chain Pipe Wrench and other "special purpose" Tools.*

## To Make Quick-Growing Plants Grow Quicker; and Slow—Faster

BON-ARBOR
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USE

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It is a complete plant food. Feed your plants; get results; *do it now.*

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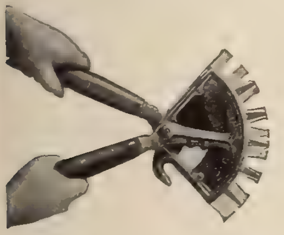

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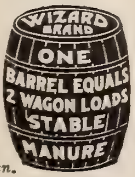
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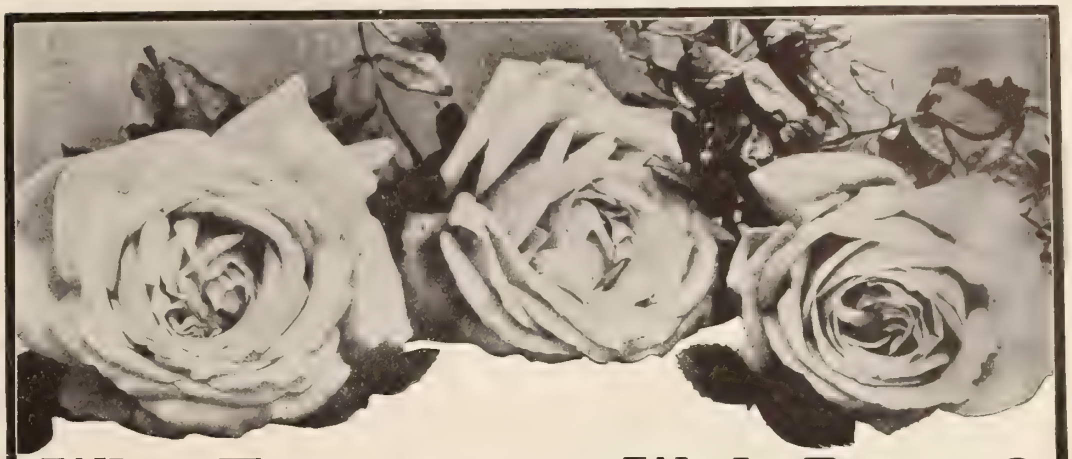

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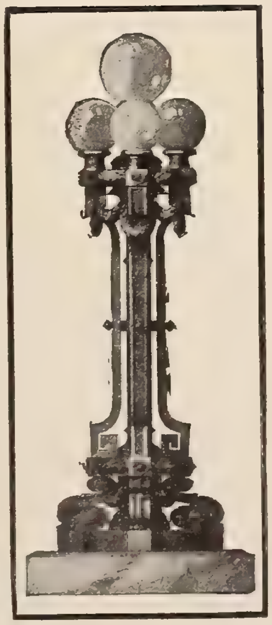

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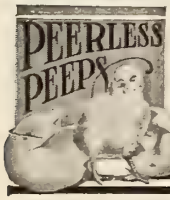

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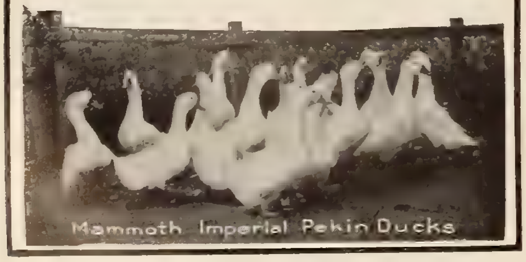

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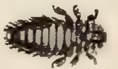
**NO**  **HENS** should be kept in your flock. It is worse than money wasted, it is inhumane. Infected chickens can only lose you money. Why not keep your hen house clean, sanitary. Make it conducive to health, vigor—egg production. Avenarius Carbolineum will do it. Easily applied, permanent, cheap. Write today for free Bulletin on "How To Keep Vermin Away."

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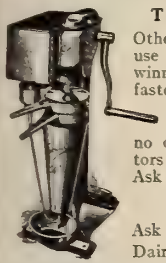

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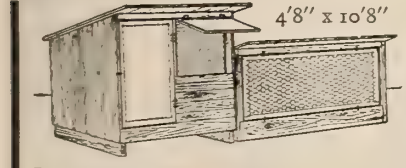

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## For Poultrymen

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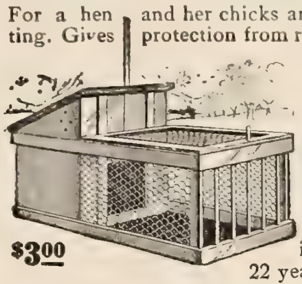

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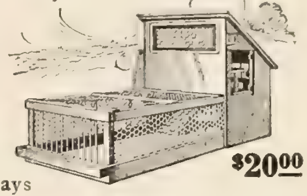

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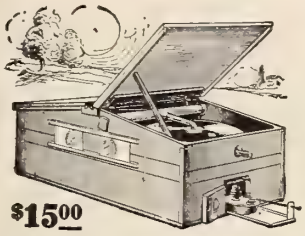

Uses the least oil of any brooder made. Storm proof. Hot water and hot air heating combined gives perfect healthful ventilation. No danger of over-heating and an even temperature is maintained in the brooder regardless of the outside cold. Used and endorsed by poultry experts and by experiment stations. Size, 3 x 5 ft.

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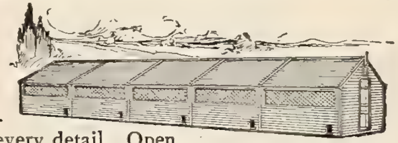

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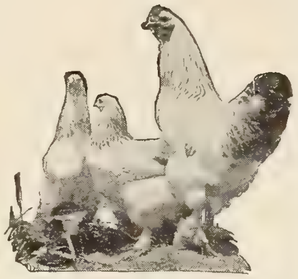

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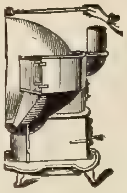

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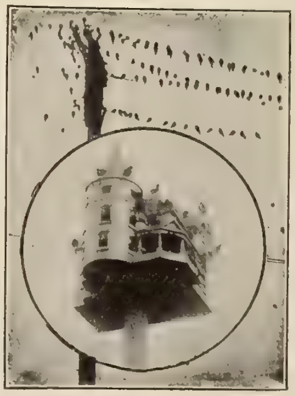

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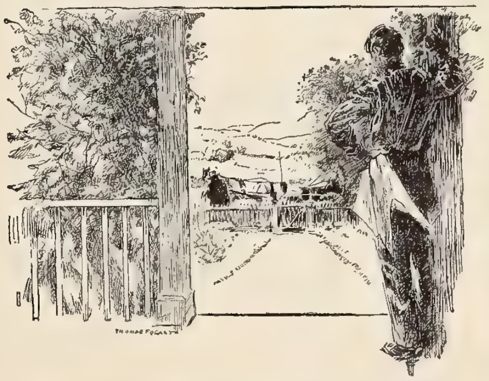

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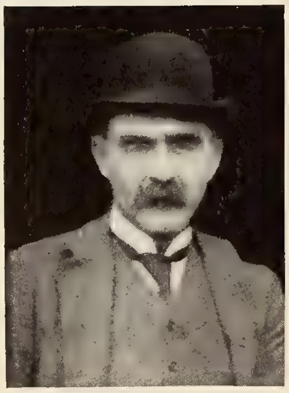

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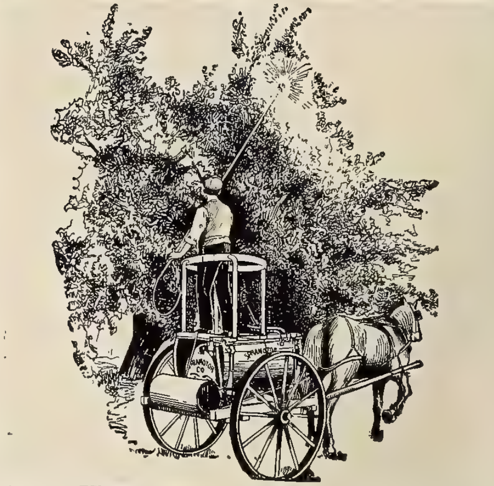

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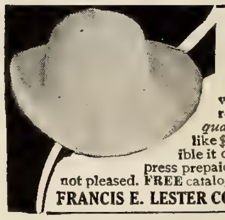

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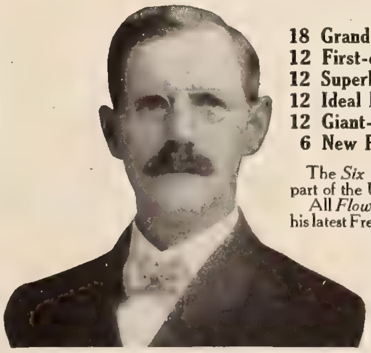

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We have been publishing nature books almost since the very beginning of our business — and it is probably true that the first volume of our Nature Library (Neltje Blanchan's "Bird Neighbors") has had a wider circulation than any other similar book. But the hundred odd thousand copies of this guide seem small in comparison to the circulation of the three volumes of nature fiction by Mrs. Gene Stratton-Porter — "Freckles," "A Girl of the Limberlost," and "The Harvester." "Freckles" has had since 1904 the unique record of reaching a wider circulation each year than in any previous year, with the prospect of continuing this for 1912; and the first million copies of these unusual tales of outdoor people and things has apparently only whetted the public appetite for more. In a month or so we shall have ready a companion volume which shows the author at her best as a scientific, yet always illuminating and popular, student of nature — "Moths of the Limberlost." This is a sumptuous volume of Mrs. Porter's own wonderful photographs, many of them in color, which will turn every reader to this fascinating side of nature.

### OTHER OUTDOOR BOOKS

Some other notable outdoor books of this spring are "The Spider Book" by Professor John Henry Comstock, whose "Manual of Insects" is almost a classic; "The Forester's Manual," a handy guide to the trees and their uses by Ernest Thompson Seton, Chief Scout of the Boy Scouts; and a charming introduction to nature for little folks called "The Real Fairy Folk," wherein the lonely little girl in the big willow tree is told the secrets of the life about her by the birds and animals themselves.

### A TRIP TO LATIN AMERICA

Mr. William Bayard Hale, of the *World's Work* staff, has sailed with Secretary of State Knox on the Cruiser *Washington*, to visit Mexico, Panama, and South America. Readers of the *World's Work* may look forward to a series of brilliant articles on American relations with Latin republics and on new phases of the work at Panama — its personal and human stories, and its vast significance to all nations.

The Farm Conference at the Country Life Press, January 15th, 1912

### THE FARM CONFERENCE

The *World's Work* Farm Conference was held at the Country Life Press at Garden City on the 15th of February. A score of visitors were present — the industrial agents and agriculturists of the great railroads, state secretaries of agriculture, and distinguished national leaders in agricultural development. Six hours of discussion showed a profound interest in the *World's Work's* undertaking to give conservative advice to farm seekers and a unanimous faith in the success of this enterprise.

### TEN YEARS OF COUNTRY LIFE

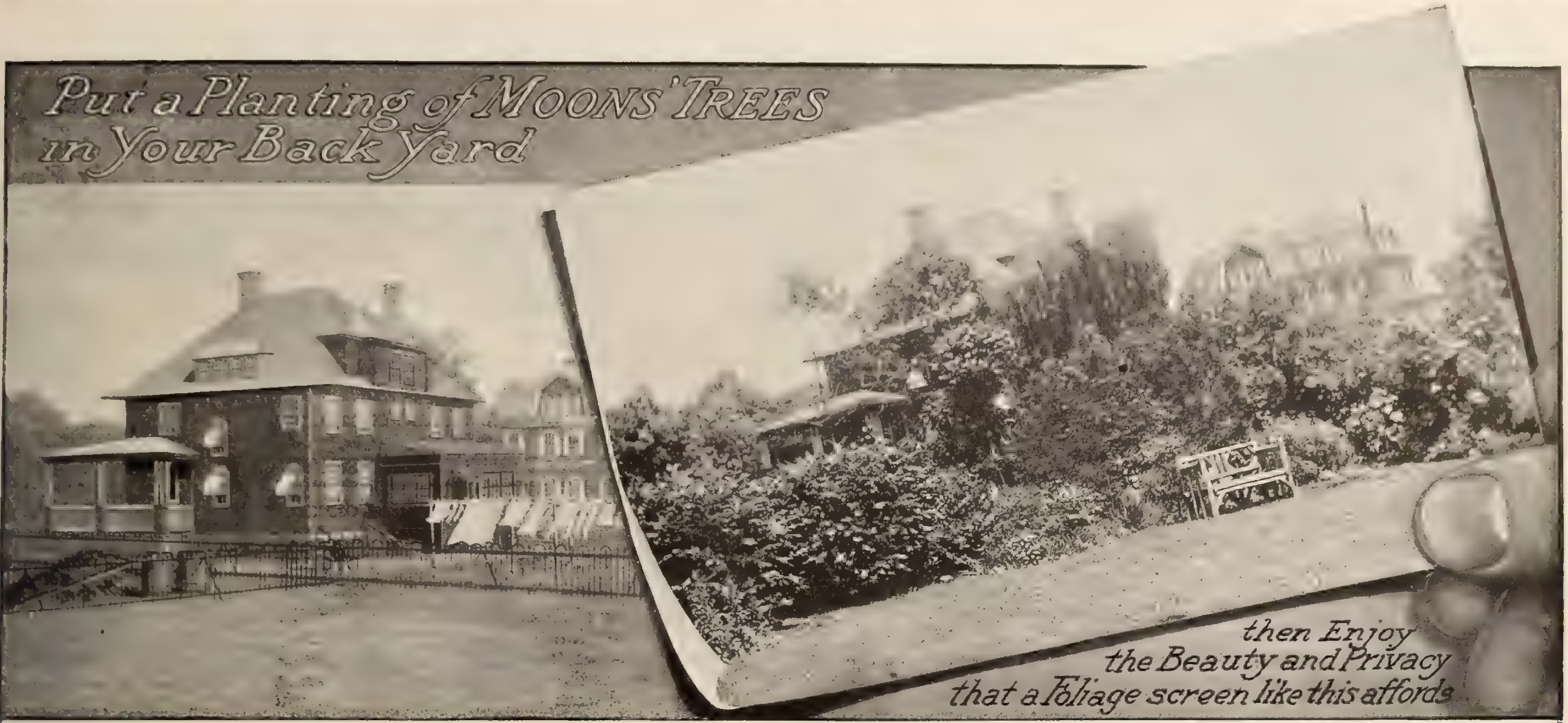
*Country Life in America* has just entered upon the eleventh year of its existence. There weren't any fireworks that we noticed, but that was doubtless an oversight on somebody's part.

We are all of us naturally inclined to attach undue importance to our own birthdays; but if it is a common human weakness, perhaps a magazine may be pardoned for indulging in it. If we don't make a noise about it, apparently nobody will.

It may seem egotistical to set apart these ten years as having any special significance; but as a matter of fact, this first decade of the new century has seen some rather remarkable achievements and advancements in the broad realm of country life.

Of course, we can't pretend that we have been the cause of it; rather, we have been one of the results. *Country Life in America* was established as the organ and mouthpiece of a new movement.

So perhaps our Birthday Number, to appear April 15th, (which the advertising department optimistically christened in advance the "Inch-thick Number"), is not such a presumptuous affair, after all. We shall talk a little about ourselves and a great deal about larger matters — progress in agriculture, horticulture, plant breeding, architecture, outdoor sport, forestry, animal and poultry breeding, game preservation, the vacation habit, suburban development, the automobile, nature study. Among the authorities who have contributed these articles are Professor L. H. Bailey, Thomas Hastings, Walter Camp, Assistant Secretary of Agriculture Hays, U. S. Forester H. S. Graves, George T. Powell, Dr. W. T. Hornaday, and Dr. Woods Hutchinson.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Landscape beauty insensibly produces an effect upon even the most practical person. Daily living with such "common" things as pine and spruce and maple trees affects one's temperament and increases one's energies. It is the quiet influence of these things which grow that counts, and the magic works when we surround ourselves with the plants we fancy or that suit our place.

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A tree is no better than its roots. Trees, like horses, are of little value with poor feet, no matter how fine the appearance. A horse may be fair, fat and foxy, but will be worth little unless he can go. In buying one should consider three

## Important Requisites of a Tree

1st. That they are free from disease and insect pests.
2nd. That they have been trained to shapely tops.
3rd. That the roots are many and fibrous, as it is the fine fibers which take in the nourishment from the soil.

The number of these fibers is greatly multiplied every time a tree is transplanted. Now, if a tree is planted in the nursery row and left for a number of years without transplanting, the top may look well, but the fine feeding roots will be at the end of the root system, several feet away, and will be left in the ground when the tree is dug for sale; whereas, if the tree were transplanted at the proper time, not only most of the roots would be saved, but many new fibers would be produced by the time the tree was ready for sale.

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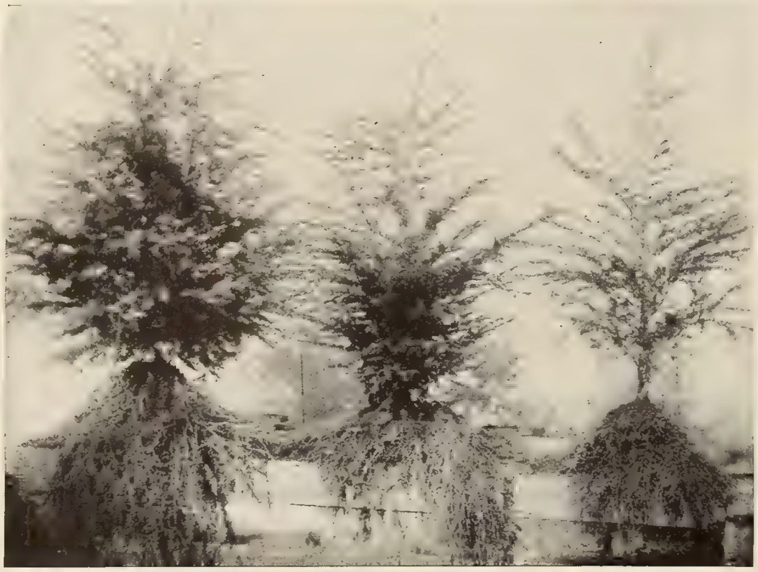

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It will be readily seen therefore that stock transplanted frequently to produce sufficient roots to move in safety, will require extra labor and consequently the price would be somewhat increased. But one might better pay double for a tree which is sure to grow than for those of which he is likely to lose 50%, as he not only loses the cost of the trees, but a year's time which is of more value that the first cost. Special prices on large lots.

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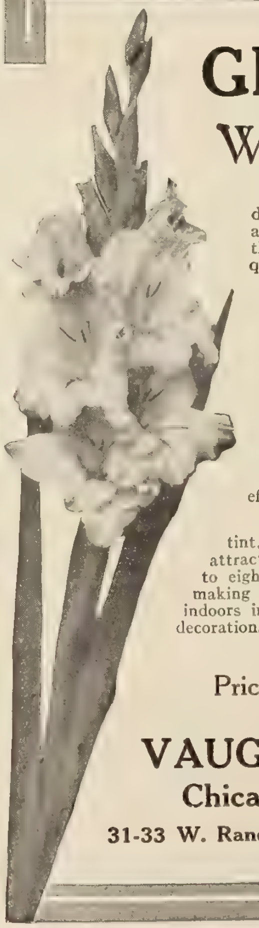

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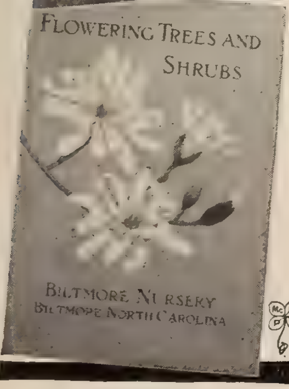

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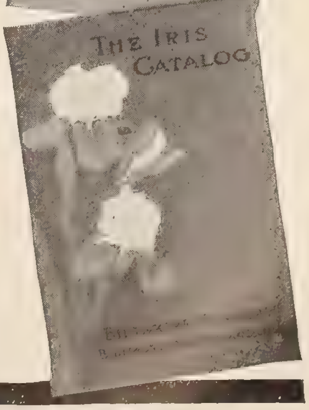

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**ELLIOTT NURSERY, 336 Fourth Ave., Pittsburgh, Pa.**

# The Garden Magazine

Vol. XV—No. 3
Published Monthly

APRIL, 1912

One Dollar Fifty Cents a Year
Fifteen Cents a Copy
Double Numbers Twenty Five Cents

The MONTH'S
REMINDER

[For the purpose of reckoning dates, New York is generally taken as a standard. Allow six days' difference for every hundred miles of latitude.]

## Starting the Planting Season Right

### THE COURSE OF EVENTS

NOW — before you do any real gardening for 1912, start a diary. Next comes planting, all important in April.

**In the vegetable garden**

1. Spread manure thickly.

2. Plow or trench the ground deeply and thoroughly.

3. Harrow or rake it, leaving it as level as possible. In planting, prepare only as much ground as you want at any one particular time.

4. As soon as the soil stops freezing, but before corn planting time, sow: Peas, bush beans, lettuce, spinach cabbage, kale, cauliflower, radish, turnip, beets, salsify, carrots, parsnips, onions, potatoes.

5. Get whatever cultivators, sprayers, fertilizers, spray mixtures, etc. you may need before you really have to use them.

6. Collect pea brush and bean poles. Plant the latter firmly before you sow the beans.

7. Transplant cabbage, lettuce, and other hardy vegetables from the hotbed, but cover them with newspapers every night for a while. To outwit cutworms, sprinkle some poisoned bran among the newly set seedlings. For details see the January, 1912, Garden Magazine.

8. About corn planting time you can sow lima beans, melons, cucumbers, squash, and pumpkin. An individual frame over each hill will help these along wonderfully.

9. About two weeks later sow tomatoes, peppers, okra, and eggplant outdoors. Watch out for these; they are the tenderest of all.

10. Dress old asparagus and rhubarb beds with nitrate of soda.

11. Don't forget to label every row you plant unless you are following absolutely a plan that is all down on paper.

**Around the grounds**

1. Rejuvenate the bad spots in the lawn. Scratch them with a rake, sprinkle over them some new soil and some seed; then roll and water.

2. Sprinkle some fertilizer over the rest of the lawn and dig out dandelions as soon as they appear.

3. Plant deciduous trees, shrubs, perennial vines and roses; also evergeeens, taking care that their roots do not dry out at all.

4. Do any odd jobs of draining and leveling, so that you can get vegetation started in such places before warm weather.

5. Prune summer and fall-flowering shrubs but not syringa, lilac and rambler roses. Bush roses can be pruned now.

6. Trim borders. Repair paths and drives; by May they will have dried out and settled so as to make repairs very difficult.

7. Start improvements that will make your place handsomer and more homelike than it was last year.

8. Plan to let the children have gardens of their own, as well as tennis courts and croquet grounds.

9. Dig around hedges, shrubs and trees.

**Among the flowers**

1. Put the potted house plants outdoors for a few hours each day. When they are well hardened, plunge them in an out-of-the-way border for the summer.

2. Root slips of geranium, etc. in pots or boxes.

3. Plant pansies, sweet peas, gladioli, and all the hardy annuals by April 15. Save the tender sorts like dolichos, nasurtium, salvia, canna, etc., until all danger from frost is over.

4. Divide clumps of perennials. Fill in any empty spaces in the borders.

5. Put up trellises for vines, brush or wire for sweet peas, and wooden or wire stakes for dahlias, gladioli, etc.

**In the fruit garden**

1. Rake the mulch off the strawberry rows.

2. Cut back to a few strong canes, the raspberries, blackberries and currants. As soon as the leaves unfold, sprinkle them with Paris green or pyrethrum.

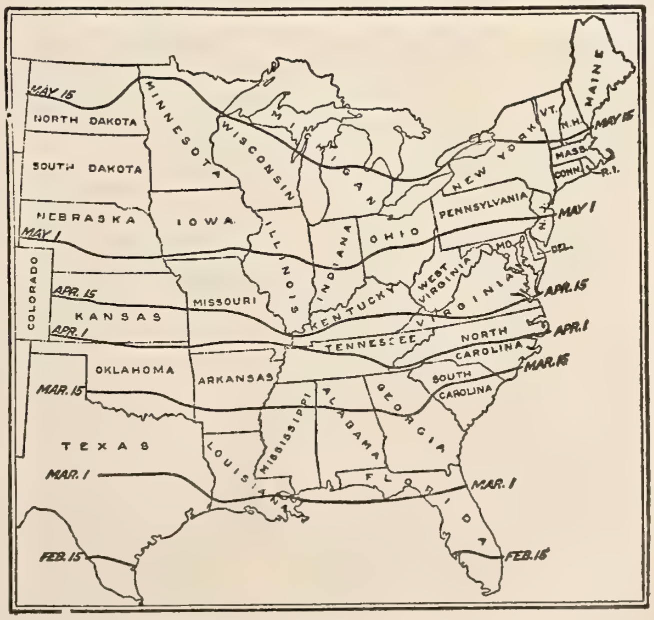
3. Finish up the pruning of all fruit trees completely, before growth starts. But don't overdo it on old neglected trees the first year. Clean out, wash with some germicide, and fill with concrete, all cavities in main branches and trunks.

4. Spray with lime-sulphur or kerosene emulsion if the buds have not opened; if they have, use bordeaux mixture with arsenate of lead.

5. Plow under the cover crop. Burn all pruning rubbish and keep the ground under the trees cleaned up.

### TO CORRECT A WRONG IMPRESSION

There is a more or less widespread idea that the directions and suggestions published in The Garden Magazine are purely local and have no general application. The accompanying map from the U. S. *Crop Reporter* helps to prove the fallacy of this notion. As the average dates for corn planting show, there is far more difference in garden operations as one goes from North to South or, vice versa, than there is between points three or four times as far apart from East to West. The average planting seasons are more synchronous, for instance, in Boston and Pierre, S. D., than in New York and Fairfax, Va. The note at the head of this page provides for an adaptation of dates according to latitude, and for longitudinal differences you need only refer to the map below, to ascertain the allowance required.



Showing corn planting time in the Eastern United States

Sheltered corner where bulbs bloom earliest. The shelter makes life possible for many plants which otherwise could not endure northern New York winters

# Planting Your Own Vine and Fig Tree — By Frances Duncan, New Hampshire

THE JOY THAT COMES TO ALL OF US WHO MAKE A GARDEN TO SUIT OUR OWN WHIMS, WITHOUT UNDUE REGARD TO THE LAWS OF DESIGN AND HIGH ART — GARDENING IN THE BACK YARD FOR THE PURE LOVE OF IT

WHOEVER would thoroughly enjoy sitting under his vine and under his fig tree should plant them himself. To buy a place with these already set out is not the same. To hire a man to plant them destroys the peculiar charm. When one has settled the fine earth about the roots with his own fingers, pressed down the soil and then raked smooth to obliterate the footprints and make the bed look as if the newcomer had always been there, one is on terms of intimacy with a plant that nothing afterward can shake.

It is intimacy and fellowship that one craves with a beloved object, not that there should be acres of it.

To know just where to look in the dead brown grass for the sharp little points of crocuses; to spend blissful afternoons in late February pruning your roses, taking all the time you like to decide which branch should come off and which should stay, instead of turning the poor thing over to a hireling who may not know a sucker from a graft and cares only to get through the job as soon as he can; to know that in the little brown stumps of stems you leave (which your unlearned friend would hardly stoop to glance at), lies sleeping a wealth of beauty and June loveliness just ready to awake — it's the firm conviction that the mother has of her child's excellence though to all else the infant is an uninteresting looking specimen. All this is a pure happiness with which the size of the garden has nothing to do. Your empire may be a six-foot long bed or sixty acres — the joy is the same.

Who, but the one who has planted and watched them, knows the sheltered places where the snowdrops come up first, where crocuses bloom the earliest and the first faint blossoms of the Jasmine will show themselves even in late February. A garden of annuals is but a makeshift, because precisely at the time when one most craves a garden, it isn't there. Annuals partake of the nature of the summer boarder — there is by no means the permanent satisfaction to be had in them that is in the bulbs and shrubs and perennials to whom the flower-bed is a settled home.

The most exquisite happiness to be had in this out-of-door world is in the wonder and the hush of awakening life. When, on a warm March morning, you lift the covering from hollyhocks and larkspurs and columbines as carefully as if you were lifting a blanket from a sleeping baby; when the sharp points of daffodil and hyacinth poke their way through the soil; when the life is all in the ground, and the color all overhead — in the faint pale gold of the cornel-tree, in the airy red of the scarlet maple, in the dazzling whiteness of magnolia blossoms — while the crocuses and snowdrops under foot seem not so much a part of the summer herbage as sprites and fairies sent up from the underworld to see how things are. For the gardener, it is the most wonderful moment of all the year — this, when the earth is again Eden, before the lurking Serpent in the guise of cutworm or other worker of iniquity has entered into his Paradise. And in this wonder and happiness has not the gardener part and lot? Has he not helped his garden to "come alive?"

Probably if we had had the ordering of the matter, we should have ushered in spring with a blare of trumpets — with flaming azaleas, with tulips in crimson and gold and great horse-chestnut flowers overhead quite *bravura* in manner. But Mother Nature goes about it diferently. Swift the movement is, opening of exquisite lightness and delicacy, but fast and faster—one loveliness breaking in upon another like the chorus of birds on an April morning. Not *allegretto* is the time, but *scherzo.*

Fragile, yet with no touch of weakness are the early-comers. It is a frail and spiritualized loveliness — from the snowdrops underfoot, thrusting boldly their hard, white-tipped spears, to the red of the scarlet maples overhead — the most ethereal red in nature. It is this fleet exquisite moment that is missed out of most gardens, because the flowering trees and the shrubs that could bring it are unbidden and only horticultural enthusiasts know how fair they are.

There has been so much made of the technical side of gardening — of color schemes, of planting in masses, of broad effects; scientific names of plants are administered to us in such heavy doses, that to make a garden has come to seem a formidable undertaking, very much as the literature on child culture is enough to appal the boldest parent; yet affection and a fair degree of intelligence is apt to do the trick; the planting impulse also is one of the simplest, most natural, most elemental of instincts.

Considering how long the race has been at it, we ought to be born knowing how to make a garden. The simplest way to begin is to plant what you want where you want it. Neither is it so irrevocable a thing: if after a year or two, the shrub you have set out offends you, it is not necessary to pluck it out and cast it from you — you can dig it up and transplant it to a less conspicuous position and have gained in garden wisdom by the experience. Our grandfathers planted orchards simply because they wanted the fruit; they set out trees to the north and west to keep off the wind and planted lilac bushes for the sake of the lilacs in the mother country. Simple as the planting was it brought a real happiness and such of it as has come to us has both character and charm.

To my mind the thing which more than anything else deters folk from planting, is the lack of garden seclusion which with us is almost universal. It is well enough to have the street side unfenced, devoted to lawns and shrubs and trees — if that is the custom of the town. But to have any real enjoyment from your garden — to be able to live in it — it must be enclosed. One cannot enjoy living in a garden open to the street and the neighbor any more than one would enjoy living in a show-window. And why this natural reluctance should be construed as an affront (as it often is) to good neighbors and friends, is difficult to understand. None of us is forced to live in a glass house. We pull down shades of an evening without considering that we may interfere with the vision of any one who chances to be standing, like *little Mabel*, with his face against the pane. Besides who of us wants his maiden efforts (possibly unsuccessful ones) exposed to the cold criticism of the passer-by. To invite a sympathetic friend to see limp and insect-worried little plants — that is another matter. But the hard, unfriendly stare of a stranger, who would not shrink from it? What garden fancies can possibly thrive in bare uncompromising limelight.

"Tell me, where is fancy bred,
In the heart, or in the head?
How begot, how nourished?
Reply, reply.
It is engendered in the eyes . . ."

says Shakespeare who evidently thinks fancy has something to do with vision. The fancy of the Elizabethan songsters is as full of garden imagery as a bobolink of music, and out it comes in the same joyous abandon — and theirs were enclosed gardens! But what chance has

A garden where one may work in peace and seclusion

Making the new house feel at home

fancy in a garden, which however well beshrubbed, lies bare to the public gaze? Would the lovely quietness of Andrew Marvell's "green thought in a green shade" have sprung there? Nay verily. And green thoughts are pleasant company.

Though they may not realize it, it is nothing but this lack of privacy that makes so many Americans hesitate to go a-gardening. It explains also why we have so few pretty little gardens in city and suburb. In a secluded garden a man is more apt to have the courage of his convictions and plant what he likes, not what he thinks he ought to like. Hence his gardening has a chance of individuality.

Beside this psychological reason, a tall hedge or a green clad wall makes a frame against which even a slight growth is charming. Moreover an enclosed garden can be made safe for birds, secure against cats and dogs or the hen who, for the flowers, is worse than the fabled dragon for distressed damsels.

Aside from the semi-public nature of our gardens, the excessive lawn space is another habit of ours which hinders the proper enjoyment of a garden. Many a worthy commuter has his interest in horticulture slowly and surely killed by the weekly task at the lawn-mower. He may gain thereby, it is true, a useful appreciation of the weariful monotony of woman's work, but enthusiasm for horticulture — never! The joy of creation is not in it, nor the joy of achievement. The tyranny of the lawn-mower explains why so few men wish to go a-gardening; no man who so employs his scant leisure has a chance to see any but the seamy side of the craft.

Now when Israel contemplated this prospect — that of sitting, every man under his vine and under his fig-tree, no small degree of common comfort was presupposed. To sit under a vine, implies an arbor; to sit under a fig-tree, presumes a seat. It would be seen then, that in the Prophet's gardening, primitive and utilitarian as it was, comfort was one of the first considerations. Herein, one thinks, lay wisdom. Whoever makes for himself a comfortable place to sit out-of-doors, is very sure to do a bit of gardening — simply to delight his eyes, and by degrees, without any great effort, the place grows to be altogether pleasant and lovable. Just as one takes up his abode in a house (or if a New Yorker — in an apartment). He doesn't buy every detail outright from a department store at one fell swoop. Instead he (or she) encamps in a place makes himself comfortable at first, and by degrees makes the rooms livable, harmonious, and, if he have the gift, even artistic.

Not only may the garden afford a pleasant place in which to sit and lounge with a pipe and a book, if one is a man, or with tea and a friend, if one is a woman, but it may even be comfortable to care for.

We have a tiresome habit of dividing the fruit and vegetable garden from the flowers as if we were separating the sheep from the goats. Yet if the vegetable rows are finished off with a row of flowers, the garden peas with a row of sweet peas, the plot well spaced and balanced (which is a matter of no expense) the kitchen garden can be very goodly to look upon and the wheel hoe cares impartially for both Ceres' interests and those of Flora. There is an abundance of flowers for the house, and the kitchen garden becomes delightful with the buxom, homely prettiness of the country-maid (of romance). Unpretentious as it is, it is very gay, and the gardener is not worried in the least for fear his show beds are not looking their best. He can plant tulips in his strawberry beds, German iris by his grapevines. and, when he brings in a basket of vegetables, he will bring flowers in with them.

If he has a lawn, then early flowering trees will make a delightful boundary and afford seclusion as well. If naturalistically inclined, in front of these he will plant perennials in groups and tuck in bulbs to heart's content. This is a far happier arrangement than the more usual one of packing tightly with shrubs the space beneath the trees. It is better for the eyes; the outline of the young trees is graceful and should not be obliterated; the perennials are barely in evidence when the trees are abloom, while later, when their own season has come, the trees serve as background. It has also a material benefit; the roots of neither bulbs nor perennials go as deeply as those of shrubs, therefore they are not likely to quarrel with their neighbors over the food supply. In winter, the trees afford protection and the mulch given to bulbs and perennials benefits all. Which excellent instance of all things working together is a source of satisfaction to the gardener.

In fact the flowering trees and naturalized bulbs make the easiest possible garden to care for. The lilacs still bloom and the daffodils come up when those that planted them have been dead for fifty years. It is a pity they are so little planted for they would make a suburb a flowery Paradise in April and early May.

We Americans (except for the South) have been a nation of sojourners. We live in apartments and hotels and boarding houses; we spend our summers in hotels also. The only element of stability among our possessions is in the furniture which year after year remains in storage. But now, either drawn by the siren inducements of garden magazines, or impelled by Colonel Roosevelt's exhortations, or driven by the terrors of cold-storage, the altitude of the price of eggs to flee the city as Lot fled from Sodom — folk are going countryward as never before. After long centuries the ideal of peace and security is coming again to be that of the captive Israelites, that every man "shall sit under his vine and under his fig-tree and drink water from his cistern; and none shall make him afraid."

That it is the owner's work lends a personal charm to this type of garden. There's real enjoyment in it

Polyanthus and Siebold primroses. The latter is worth growing for its foliage alone

These dwarf sirises (*I. pumila*) will one day come to their own. White grape hyacinths behind

# Perennials Most Worth Planting for Flowers—By Sherman R. Duffy, Illinois

### THIRTY PLANTS THAT WILL GIVE A MAXIMUM OF BLOOM FOR A MINIMUM OF LABOR AND INCREASE YEAR BY YEAR—THE GOOD POINTS OF EACH AND WHY THEY APPEAL TO THE BEGINNER

FRIEND NEIGHBOR is going to start a perennial border this year. He has confided this fact to me with a request for assistance and coöperation in the way of any surplus I may have this spring. He has nourished his æsthetic nature on my border for some time and his appetite has grown. Friend Neighbor is a "real estater" and he assures me that a hardy border will add an appreciable percentage to the selling value of property. He regards well-kept grounds with hardy borders and shrubbery as a sort of trade secret. "A bright flower garden makes a house look attractive whether it really is or not," he informed me.

He further averred that everybody ought to plant something to give them some object for needed exercise as well as to increase their interest in their home.

Another reason was that it would interest the kiddies and keep them from running out into the streets looking for excitement. In fact, Friend Neighbor found so many reasons for starting a border that I didn't see how he had restrained himself so long. This, he explained, was because he had mine to look at.

Next time he saw me he elaborated his plans. Friend Neighbor is one of those positive sorts of characters; he wants what he wants when he wants it, and he wants not what he wants not just as enthusiastically and perhaps even more so.

"First of all," quoth Friend Neighbor, "the contour of my fair domain shall not be sullied by golden glow. If anybody tries to give me any golden glow, I'll throw it at him."

Having agreed heartily in the condemnation of golden glow, Friend Neighbor proceeded to outline what I was to do for him in the way of starting his border. "I want you to pick out my plants for me. I want mostly fuzzy stuff like you have." I smothered a few objections to such a characterization of some of my pet plants long enough to find out Friend Neighbor's ideas. "I want a lot of that pink fuzz," he continued, "and a lot of that light purple fuzz and some of that white fuzz. You know what I mean. I want a lot of stuff that I can look at without hurting my eyes. I don't want a lot of stuff I have to see every day in everybody's yard along the street. And last but not least, I don't want a lot of 'dope' plants making an anarchist parade on my premises such as you have in your yard in May and early June."

This last remark was directed at a fine patch of oriental poppies which were a very sore spot with Friend Neighbor. He used to admire and wonder at them, but one day he took one to his office in the city and none of his associates would believe that it was a real bloom. They told him it was made out of tissue paper and that probably he stole it from his wife's last spring's hat. Since that time the poppies have been in great disrepute.

"I want that fuzzy stuff," reiterated Friend Neighbor, "because it's easy to look at and doesn't rise up and swat you in the eye every time you turn in its direction. It's restful and soothing. Also, I don't want a patch of yellow in August that will hurt my eyes and make the sun look twice as hot as it really is. Something soft, restful, and soothing. My temperature goes up two degrees every time I go by one of those infernal golden glow outrages."

Some order to fill — fuzzy, not blatant, restful, soothing. Yet I felt complimented that my border fulfilled some of Friend Neighbor's ideas. Knowing that I was confronted by a most persistent individual, I started to work at once. Here is the list which I submitted to Friend Neighbor, and one from which I think any one can select the foundation of an excellent perennial border. These perennials seem to me as essential to a hardy border as salt, sugar and flour are to a grocery store. They will form a framework or skeleton around which may be built a multitude of beautiful pictures:

1. Foxgloves.
2. Peach bells or platycodon.
3. Columbines.
4. Larkspurs.
5. Oriental poppies.
6. Grass pinks.
7. Sweet william.
8. Peonies.
9. German iris.
10. Shasta daisies.
11. Phlox.
12. Hardy chrysanthemums.
13. Hollyhocks.
14. Coreopsis.
15. Gaillardias

First of all, these perennials will survive the winter without protection. They are less susceptible to drought, and surer to bloom, and are less subject to disease and insect pests. There are no plants in this list that are weedy or increase so rapidly that they become a nuisance. This last condition bars the perennial sunflowers and asters, although, personally, I should include them for myself.

He looked it over carefully while I explained to him my theory, using the grocery story simile above. "Well," said he, "I'll run my border on the delicatessen store plan." Whereupon he eliminated about half of the list and clamored for the "fuzzies."

By "fuzzies" Friend Neighbor meant the little flowers, those which please by the number of their bloom and give misty effects. I have a lot of them in my border and perhaps prejudiced my neighbor in their favor. I do not think a perennial border is complete or finished without them, yet they are not sufficient in themselves to make a border. However, I find more real pleasure in the little posies than I do in the big fellows whose appearance I can tell exactly long before they come into bloom. Friend Neighbor had the same idea although, for a gentleman claiming such a breadth of æstheticism, the word "fuzzy" was a bit jarring.

The sea lavender (*Statice latifolia*) is valuable for mingling with coarser flowers. Lasts when cut, too

After several *post mortems* on last year's border, Friend Neighbor agreed to the following list of fifteen plants which he would use with such of the original fifteen as pleased him after he had substituted sunflowers for oriental poppies:

1. *Iris pumila.*
2. Primroses and polyanthus.
3. Heucheras.
4. Perennial asters
5. Columbines.
6. *Veronica longifolia*, var. *subsessilis.*
7. Eryngiums.
8. Tufted pansies.
9. *Statice latifolia.*
10. *Gypsophila paniculata*, var, *fl.pl.*
11. *Eupatorium ageratoides.*
12. Heleniums.
13. Hardy salvias.
14. *Cerastium tomentosum* and *Biebersteini.*
15. Hardy candytufts.

These fifteen perennials have furnished me with more enjoyment than any similar group I have ever grown — not that they are in all cases particularly beautiful in themselves, but they lend themselves so well to producing beautiful groups or as Friend Neighbor says, "something restful and easy to look at." I wouldn't be without the fifteen standards for anything and neither would I want to give up any of the second fifteen, but of the entire thirty I should like least to part with *Iris pumila.*

This little three-inch iris is my original friend among the perennials, as the York and Lancaster rose is among the shrubs. Both enjoy a ripe old age. The rose has been handed down for generations in my own family, and the iris had enjoyed a similar ancient lineage before it was given to me thirty years ago. These are not mere plants; they are personalities.

There are volumes written about the daffodil and its wind-taking charms but the dwarf irises, which contribute an equal share of beauty in windy March and showery April, get scant mention. Some day the race of dwarf irises, which quietly has grown into a populous tribe, will get its just dues. I know more would be heard about them if the beauty of a patch of these little purple fleur de lis were seen backed up by a mass of white grape hyacinths and in front of them a mat of Munstead polyanthus of white and cream shades. I have over a dozen varieties, ranging from three to twelve inches in height, which come along with the daffodils and early tulips and contribute a series of purples, blues, yellows, and whites with an endless variety of veinings, flecklings, and variegations. One little fellow, iris Bal-Ceng Harlequin, has a white ground flecked with opalescent green with bronzy shadings. A whole garden could be made of these little irises.

The rich-red brown of the improved sneezeweeds give a fine touch of color in fall (var. Riverton Beauty)

Another combination I like is the purple type of *Iris pumila* with Empress daffodils. This is only one of a great variety of uses to which they can be put. They make a good edging and keep back the encroaching sod. This perennial met with the most enthusiastic approval of Friend Neighbor who has watched for the purple flags spring after spring. He already had a few of them but is going to get more.

Next to the irises the primroses and polyanthus met with most enthusiastic approval. There is nothing finer for an early spring display than the Munstead strain of polyanthus. The individual flowers are huge and come in a beautiful assortment of yellows, ranging from almost brown to pure white with central stars of various shades. They are of the easiest cultivation and hardy as rocks. The deep crimson polyanthus makes a fine companion-piece, but I do not like them as well as the yellows. They are so much more easily grown than the true primroses that it is a waste of time to bother with the latter except for sentimental reasons. However, I want both. Next to the Munstead polyanthus I do not know of any more beautiful early spring perennial than the Siebold primroses. The colors range from shades of pink to deep magenta with various tints, and the edges of the flowers are often beautifully cut and crimped. The foliage is the handsomest of all the hardy primroses.

Then comes *Primula denticulata* and I think Friend Neighbor likes it the best of all the primroses. It is a dainty little flower in shades of blue and purple. It must have a subtle attraction for I lost a lot of mine last spring in a most singular manner. A lady lunatic escaped her keeper and wandered through my yard. With hundreds of daffodils, tulips and other flowers in bloom she seized upon the denticulata primroses, dug them up, took them down the street and planted them in front of the door of a small cottage.

Of the perennial sunflowers, the variety Miss Mellish commands attention, but it must be kept under control

Friend Neighbor says she proved her sanity.

Friend Neighbor was unusually demonstrative over the "pink fuzz" which was his characterization of alum root (*Heuchera sanguinea*) and some of the newer varieties. This perennial is a little gem and the only plant with which I can compare it for delicacy is the lily-of-the-valley. It makes a beautiful bouquet with a few sprays of asparagus, and the newer varieties, such as Pluie de Feu, are wonderful advances over the old type which was beautiful enough, it seemed to me. Heucheras are easily raised from seed, the only trouble I have found with them being that if they were allowed to go too long without division, the root stems became too long and were apt to rot at the top during severe weather. However, when the top was killed, new shoots generally appeared from the roots but they did not bloom for a year. They have a long season of bloom and their foliage is unusually attractive.

The perennial aster for which Friend Neighbor put in a plea was a tiny little flower. I lost the label of the plant when I secured it in a collection some time ago and have forgotten its name, but it was one of the vimineus section. It is a fine-leaved, wiry plant growing about two feet tall and blooming in early September. It is covered with tiny white blossoms with a dark centre, the entire blossom turning to a light pink as it ages. "That's one of the best fuzzies you've got," was Friend Neighbor's comment as he restricted himself to this one for the present. It has one good quality — it does not send runners underground to steal territory to which it is not entitled. It is a most orderly little plant and unusually attractive. There are a number of these tiny flowered asters and any of them are exquisite, much handsomer to my way of thinking than the coarse New England varieties.

Columbines were included in both the staple and the special list, for Friend Neighbor and myself are unanimous in the belief that a better hardy perennial for its season does not grow than the columbine, particularly the long spurred varieties. There are several strains of improved columbines and all are good. I gave my columbines plenty of room for the first time last year. They need room so that the branches may spread and show the graceful habit of the plant. The rose and salmon varieties, such as Rose Queen, are the most attractive. I've tried to plant them according to color but it is an impossibility to raise them true from seed. However, it seems impossible to produce a discord among them, no matter what the colors.

Of the short spurred columbines, the variety Helenae is one of the very best and is the earliest to bloom. It is showing color with deep blue sepals and a white corolla by the time the daffodils are gone.

"*Veronica longifolia*, var. *subsessilis* — what's that all about and what is it?" demanded Friend Neighbor, when he confronted this name on the list. I explained where it was located in my border. "You can call it a speedwell," I volunteered. "It's a good name," he opined. "You've got to speed up to say it all in one breath. Yes, that for mine."

This speedwell is a newcomer in my border but it has come to stay. I was rather doubtful of its hardiness but it has proved a good resister of thaws and furnishes one of the finest summer blues I have. It is associated with white snapdragons and nothing is showier during August than this particular section. With clean, attractive foliage and a spike six inches long which remains in bloom a long time, it surely is one of the most deserving perennials, and, besides, it is "fuzzy!" The stamens protrude, giving a feathery effect to the spikes and relieve them of any suspicion of stiffness. I had such bad luck with *Anchusa Italica* "Dropmore" variety, that I gave it up and the veronica is a more than acceptable substitute. The anchusas blossomed themselves to death every time I tried them.

If anybody asked me why I ever planted an eryngium I'd be forced to confess that I didn't know. I can't truthfully say I think these sea hollies beautiful, yet, I insist on having them. There is something so singular about this strange cousin of the parsleys that it wins a place for itself in my border, and Friend Neighbor avows it is such a freakish looking thing that we are the only ones that will grow it. My first eryngium was the native *Eryngium yuccæfolium.* I dug it up and took it home under the impression that it was some sort of a lily, judging from its parallel-veined, narrow root leaves. When it sent up a blossom spike with what looked like green clover heads I was surprised, and was still more astonished when I took it to school and endeavored to trace it through a key and kept arriving at the parsley family. I refused to consider it possible until my instructor informed me it was correct, although the inflorescence is not an umbel. I kept the yucca-leaved sea holly for some time and then a few years ago secured

The native eupatorium solves the problem of the bulb beds and gives white sheets in summer

*E. amethystinum*, with globe thistles and gypsophila, because I saw pictures of them in "Colour in the Flower Garden." It makes a most attractive group, but my eryngiums never grew amethystine enough to justify their name, so I added to the group in an experimental way until now I have a planting of which I am very proud and which is to be reproduced bodily by Friend Neighbor as the ne plus ultra of "fuzzy restfulness."

The single *Gypsophila paniculata* had such a short season of bloom that the effectiveness of the group was spoiled before it got fairly going, so I substituted the double variety when it was first offered for sale. Although, as a rule, I like a single better than a double flower, this is one case where I think the doubling is a decided improvement, as the flowering period of the double gyp is almost double that of the single.

But while all the praise is being lavished by horticultural authorities upon the gypsophila, I see no mention of another beautiful cloudy effect that can be so easily produced by planting a sea lavender, *Statice latifolia*. I have grouped the statice with the gypsophila and the mingling of the multitudes of fine flowers is exquisite. The pale lavender of the statice harmonizes nicely with the eryngiums and globe thistles and gives a note of pale coloring that was lacking. *Statice latifolia* seems to have all the good qualities of the gypsophila in its multitude of dainty bloom with the one drawback of coarse foliage, but as the leaves lie flat upon the ground during the flowering season this objection is overcome.

My advice to planters of perennials is this — whenever any one says plant "gypsophila," add "and statice with it."

Tufted pansies are to occupy a prominent position in the new border. I have had them for two years and can grow them readily where the ordinary pansy refuses to take up its abode. I like the small-flowered ones with "sassy" faces, which an English friend insists are violas. They look like the old-fashioned Johnny-jump-ups and bloom continually. It seems a much sturdier plant than the pansy, and it is easy to grow as many plants as are wished by taking cuttings from the scores of shoots which spring from the roots. Taken all in all, the tufted pansies were one of the most satisfactory perennials I had. They started blooming in early spring and kept at it until I cut them down in midsummer and as soon as they had sent up a fresh growth, furnished a sheet of bloom until freezing weather.

Though massive in effect, the sneezeweed (*Helenium autumnale*) seems indispensable to the border in fall

It may seem strange to include *Eupatorium ageratoides* — I don't know any good common name, and refuse to call so pretty a flower by the misnomer of "button snakeroot" — in a collection of fifteen especially desirable perennials, but I am convinced that this humble native belongs there. Give it a chance in any shady corner and plant a few groups of *Actæa Japonica* for variety and watch the results. You will find a snowy sheet of feathery heads with an occasional plume of actæa carrying the fluffy whiteness up to heights of three and four feet. I saw several paths through the woods last summer lined as evenly with solid masses of eupatorium as though it had been planted by a gardener. It is much more delicate than its over-used namesake the Mexican ageratum. This is the "white fuzz" that Friend Neighbor regards as one of the salient features of his prospective border.

As it is a woodland plant and used to clambering up through various obstacles until it reaches the free air, the eupatorium has proved particularly useful in solving a bulb problem. It occupies ground jointly with a thick planting of Emperor daffodils. After they die away, up comes the eupatorium which has been struggling to get by for several weeks, and there is another crop of bloom without the trouble of touching the ground.

September is the month of purple and gold composites. Unfortunately, a large number of them are coarse and weedy until they conceal their foliage with a mass of bloom, but against the heleniums no such complaint can be lodged. Of all the golden composites, the giant sneezeweeds (*Helenium autumnale*, var. *superbum*) is quite the most golden. Waving great heads of pure yellow buttons surrounded with slightly toothed ray flowers, it is one of the handsomest of the early fall flowers. Riverton Beauty and Riverton Gem make a magnificent trio of refined and highly colored bloom. These are the only perennials, classified as "blatant" that Friend Neighbor will countenance, but he says they have "some class." They require no particular attention and are sure to respond with a great display when their season arrives. The dull red of Riverton Beauty and the pale yellow and dark cone of Riverton Gem afford a fine dash of color in the border. These, with the Miss Mellish sunflower, are the only yellows allowed at this stage.

Grow pansies, by all means. The "tufted" type blooms longer than the bedding kinds

Sunflowers are a genuine nuisance; but Miss Mellish has such refined bloom (for a sunflower), with gracefully twisted petals, that I really can't get along without her. She will endeavor to occupy the entire border and has to be dissuaded by force, but a few of these stately plants, given three feet of room in which to develop, are well worth the trouble.

The two hardy salvias (*S. farinacea* and *azurea* var. *grandiflora*), are rarely seen in these parts but they are exceptionally fine plants and have proved very satisfactory for the purpose of furnishing a display when there was nothing else.

*Salvia azurea* var. *grandiflora* is much the showier of the two and in late August and early September, when there is a general lull before the riot of composites, produces branching spikes covered with azure blue flowers and forms a solid sheet of color. It is absolutely hardy and blooms the first year from seed. The foliage is rather insignificant, but it is a sure investment for its particular time of year and redeems a seedy looking border.

The silver sage (*Salvia farinacea*), wouldn't elicit a second glance from anybody until October. Then it is in its glory and will battle for existence even with killing frosts. It has clean, bright foliage and makes a fine bushy plant from three to four feet tall. I surround my eryngium-gypsophila planting with these salvias and when the former are cut down the silver sage reaches over and covers the vacancy.

This salvia earns its name of silver sage because the entire flower spike is covered with a silvery powder. There is considerable variation in different plants; in some the entire spike is blue, while in others the spike is blue and the calyces white. There are occasional forms in which both the spike and the flower are pure white. It sends up a terminal spike at first which will be disappointing. Then it branches from every joint and by October the entire plant is covered with blue. It is hardy in dry situations, but will not survive on level ground where water is likely to stand. It reaches its full development the first year from seed and self-sows so freely that it may be regarded as perennial once it is established.

Last on the list are the delight of Friend Neighbor's heart, and of mine as well — "those little things that creep and nestle around and cover themselves with glory whenever they have a chance." These are the cerastiums and the hardy candytufts.

The blue-green tamarix, (*T. hispida*, var. *æstivalis*), growing out of a solid mat of *Cerastium tomentosum* and waving its rose-pink plumes above a carpet of gray leaves dotted with the white stars of this little perennial, was the very best bit of planting I did last year. This little gray-leaved creeper makes a fine bed, whether it is used with the shrubs or as an edging to the border. Five cents' worth of seed will establish a fine mass of it in a year, and it is a little beauty when at the height of its flowering season.

Another plant that covers the ground and rambles around, in and out, and pokes up its snowy heads as a foil for more brilliant bloom is the hardy candytuft, *Iberis sempervirens*. My Darwin tulips were never so beautiful as when they sprang from a mat of this candytuft with its dark, evergreen foliage. A liberal supply of candytuft seed has been sprinkled over Friend Neighbor's tulip bed. *Iberis Gibraltarica* is not so hardy and has pale purple heads.

It is the little things that count in making a border; even the little plant louse counts, and heavily at times! And while it does not seem like orthodox gardening to encourage any one starting a border for the first time to ignore the commoner and almost indispensable species, I am not at all sure but that more genuine enjoyment can be attained by watching the development of the little perennials, which never give exactly the same effects two years in succession, than from watching for the foxgloves and Canterbury bells and others of more stately growth, which present an identical appearance year in and year out.

In all the borders I know of there isn't enough attention paid to occupying all the space. And there are so *many* tiny plants just waiting for a chance!

# The Cost of Making a Perennial Bed—By Werner Boecklin, New York

IT IS vain to expect good or even ordinary results from a cheaply prepared perennial bed. Cheap materials, cheap labor, skimp quantities are not conducive to lasting qualities. If you have reached the age of wisdom you will say "give me the best or else I will go without."

A recent experience of mine will show the foolishness of preparing flower beds on the short measure principle. Four large formal beds had been made in a garden. The work was done under the direction of a so-called "gardener." Flowers there had been none, or practically none, for two successive years. I secured the consent of the owner to make over the beds and found them to be only one spade deep, made of a very poor clay soil with practically no humus and with a slight coloring of manure at the bottom. The beds were in the open and baked throughout the summer.

Two feet deep is little enough for a perennial bed and since I do my work in a neighborhood where materials are expensive, I limit the depth to this amount. Of course everything is conserved so far as possible, for when top soil costs $2.50 a team load, manure $2.50, and labor $2.00 to $3.00 per day people are not inclined to rush into garden work without carefully considering the expense.

So when I started on a large perennial bed I saw that the sods and top humus, about 8 inches in all, was carefully placed to one side and kept separate from the clay subsoil. With labor and materials at the amounts named I found the itemized cost as shown below:

This is equivalent to $0.064 per cu. foot of bed or $0.128 per square foot.

These unit prices are convenient and although not applicable to all conditions are a great help in arriving at a near approximation to the cost of a proposed piece of work.

Area of Bed, 546 sq. ft.; depth of bed, 2 ft.; 8 inches top soil, and sod 16 inches stiff clay. Material excavated, 1092 cu. ft.

| | |
|---|---|
| Labor, including excavation, refilling, mixing manure and finishing | $36.94 |
| 10 loads manure at $2.50 | 25.00 |
| Bone meal, 160 pounds | 3.66 |
| 2 Loads finishing soil at $2.50 | 5.00 |
| Total | $70.30 |

In the bed here considered six inches of manure was placed in the bottom and some of both the clay and top soil, with all the sods, were then thrown in and thoroughly mixed with the manure. Top soil was kept for the upper layer and some screened soil was finally spread over the top.

After all, the success of a bed or border depends on the proper preparation. Dig deeply and give good soil for the roots

# Our Native Shrubs and What May Be Done With Them

By Norman Taylor, Curator of Plants, Brooklyn Botanic Garden

IN HOW many of our gardens can one find any attempt to grow the wild shrubs of the countryside? The scramble for something new, something startling, has almost overshadowed the quieter beauties, the softer harmonies of the shrubs that grow close at home.

The accompanying table has been made up from an actual planting list used at the Brooklyn Botanic Garden of the Brooklyn Institute in the installation of the shrub collections of the wild flower garden.

It will be noted that under each month group the names are arranged in botanical sequence so that allied plants are brought together. All the ninety-four species are offered for sale in American nurseries. Those in the column "Remarks and Notes" as well as about twenty others not included, must be collected in the wild. Wherever possible the writer will be glad to send information as to the sources of supply.

A word now as to cultivation and care. Most of the shrubs, except those so noted, can be planted either in spring or fall, as this is a matter that should be determined by the planter's convenience. In digging the holes make them twice as wide and deep as the size of the roots apparently demand. Note carefully the column "Preferred Habitat," so that the shrubs may find congenial surroundings. Pack the soil well around the roots, water thoroughly, and frequently if the weather is dry and windy. The first winter or two a heavy mulch of leaves, or leaves and manure mixed, to be dug in the following spring, will well repay the expense and trouble.

It will be noted that some of the shrubs are marked with a dagger (†). These all belong to the heath family and require special treatment. A soil composed of rotted sods and leafmold, about half and half, is most essential for the successful cultivation of these plants. They require peculiar acid soil conditions well approximated by the above mixture, and a mulch, preferably of red-oak leaves, or the leaves of the mountain laurel if available. Never disturb the roots of these plants by digging in the mulch, which is better left on indefinitely. Soils with much lime in them must also be avoided when growing these heath-family plants.

### OTHER WAYS TO USE THE TABLE

It is often somewhat difficult in arranging a shrubbery planting to group the plants according to the color of their flowers. For the greater ease in using the larger table, and so that one can arrive at the relative frequency of the various colors desirable for use in the scheme, the following table is appended. The numbers refer, of course, to those in the table below. The figures given in parenthesis is the total of plants in each division.

*By color of flowers.* Yellow-green (10): 1, 8, 9, 10, 30, 31, 36, 44, 49, 86. Brown-green (10): 2, 3, 4, 11, 12, 13, 14, 15, 27, 39. Yellow (5): 5, 25, 41, 84, 92. Pink-purple (4): 7, 74, 75, 83. White (35): 6, 17, 18, 19, 20, 21, 22, 24, 28, 29, 32, 40, 42, 43, 45, 46, 47, 51, 55, 57, 58, 59, 69, 70, 71, 72, 76, 78, 79, 80, 81, 82, 88, 89, 90. Green-white (11): 16, 23, 33, 50, 52, 63, 64, 65, 66, 87, 94. Pinkish-white (10): 26, 37, 38, 54, 56, 61, 67, 73, 77, 93. Pink (5): 34, 60, 62, 85, 91. Lilac (1): 35. Violet-purple (2): 48, 68. Orange-red (1): 53.

It often happens, too, that we have some definite spot, such as a small stream or swamp, a dry hillside, or a shaded wood, that we wish to beautify. Therefore:

*By preferred habitat of shrubs.* Moist places (19): 1, 2, 4, 9, 15, 17, 30, 36, 42, 50, 75, 78, 82, 83, 84, 85, 87, 88, 89. Indifferent (32): 3, 5, 6, 7, 12, 14, 24, 29, 32, 35, 37, 38, 41, 43, 45, 47, 48, 51, 52, 59, 60, 61, 62, 68, 70, 71, 72, 79, 80, 81, 90, 91. Shaded woods (13): 8, 16, 23, 25, 26, 27, 31, 63, 65, 67, 69, 74, 92. Dry places (19): 10, 13, 18, 20, 21, 22, 34, 39, 46, 49, 53, 54, 56, 58, 64, 77, 86, 93, 94. Swamps (6): 11, 40, 55, 66, 73, 76. Thickets (1): 19. Cool woods (4): 28, 33, 44, 57.

In planning a screen for an unsightly fence or building, or to cover up some small landscape importunity, it is often essential to know, *en masse*, the heights of shrubs for such purposes. The following table gives the dimensions of the shrubs, normal individuals averaging about midway of the extreme heights given.

*By height of shrubs.* One to four feet (13): 2, 6, 21, 27, 34, 56, 62, 75, 77, 83, 84, 91, 93. Two to five (24): 10, 11, 13, 16, 22, 25, 31, 36, 37, 42, 44, 53, 57, 60, 61, 65, 67, 69, 73, 81, 82, 85, 90, 94. Three to nine (29): 3, 4, 8, 12, 14, 15, 17, 20, 26, 28, 32, 33, 35, 38, 39, 41, 43, 45, 48, 54, 58, 59, 70, 72, 74, 78, 80, 86, 88. Six to fifteen (21): 1, 5, 7, 18, 19, 29, 40, 46, 47, 49, 50, 52, 55, 64, 68, 71, 76, 79, 87, 89, 92. Ten to eighteen (7): 9, 23, 24, 30, 51, 63, 66.

PLANTING TABLE FOR OUR NATIVE SHRUBS

| COMMON NAME | BOTANICAL NAME | HEIGHT (FEET) | COLOR OF FLOWERS | PREFERRED HABITAT | REMARKS AND NOTES |
|---|---|---|---|---|---|
| **March=April** | | | | | |
| 1—Pussy willow | *Salix discolor* | 7–12 | Yellow-green | Moist places | Flowers before the leaves come out. *S. cordata*, a larger bush, with broad leaves is worth cultivating. Not in the catalogues. |
| 2—Dwarf willow | *Salix tristis* | 1–4 | Brown-green | Moist places | Useful in masses. Can be made to grow in all sorts of places. One of the very earliest flowering shrubs. |
| 3—Hazel nut | *Corylus Americana* | 3–6 | Brownish-yellow | Indifferent* | Nuts edible and much gathered by squirrels. The catkins out before the leaves. European hazel nut is a better plant. |
| 4—Alder | *Alnus rugosa* | 5–9 | Brownish-green | Moist places | Will grow in other situations. The fruits, not very strong, stay on all winter. Useful in masses along brooks. |
| 5—Spice bush | *Benzoin odoriferum* | 6–15 | Yellow | Indifferent | Flowers much before the leaves, very fragrant. Near N. Y. usually not over 10 feet, larger southward. |
| 6—Red chokeberry | *Aronia arbutifolia* | 2–4 | White | Indifferent | Common from N. Y. southward. *A. atropurpurea*, with black fruit is worth while. *A. arbutifolia* has red fruit. |
| 7—Red bud | *Cercis Canadensis* | 4–15 | Pink-purple | Indifferent | Magnificent masses of color before the leaves appear. Sometimes almost a tree. Rare as a wild plant but easily cultivated. |
| 8—Fragrant sumac | *Rhus Canadensis (aromatica)* | 3–8 | Yellowish-green | Rocky woods | Will grow in unlikely places and an excellent shrub for wild effect. Flowers half hidden by compound leaves. |
| **April=May** | | | | | |
| 9—Shiny willow | *Salix lucida* | 10–18 | Yellow-green | Low places | Will grow almost anywhere. *S. myrtilloides* a shrub 3½ feet, not in the trade, is handsome with yellow catkins. |
| 10—Prairie willow | *Salix humilis* | 3–6 | Yellow-green | Dry places | Will grow almost anywhere. Flowers out much before the leaves. Useful only in mass effects. |
| 11—Sweet gale | *Myrica Gale* | 3–6 | Inconspicuous | Swamps and bogs | Ash colored fruits effective all winter. Will grow in many other situations besides the preferred one. |
| 12—Bayberry | *Myrica Carolinensis* | 3–8 | Not showy | Indifferent | Grows equally well in sand loam, or swampy places. Leaves shining green, long persistent. Fruits whitish; all winter. |
| 13—Sweet fern | *Comptonia asplenii-folia* | 3–5 | Golden-brown | Dry hillsides | Golden catkins very showy before the leaves. Whole plant very fragrant. Can be grown almost anywhere. |

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*The term "indifferent" in this connection is used to signify that the plant will adapt itself to average conditions.

PLANTING TABLE FOR OUR NATIVE SHRUBS—*Continued*

| COMMON NAME | BOTANICAL NAME | HEIGHT (FEET) | COLOR OF FLOWERS | PREFERRED HABITAT | REMARKS AND NOTES |
|---|---|---|---|---|---|
| 14—Beaked hazel nut | *Corylus rostrata* | 3–6 | Brown-yellow | Indifferent | Along streams it makes effective screens and borders. The long beak quite distinct from No. 3. Occasionally 8 feet. |
| 15—Hoary elder | *Alnus incana* | 4–9 | Greenish-brown | Moist places | Leaves pale green beneath. With Nos. 3, 4, 14, and 89, it can be used effectively along shores of streams and ponds. |
| 16—American black currant | *Ribes Americana* | 3–5 | Green-white | Shaded woods | *R. lacustre* and *R. rubrum*, the latter with reddish purple flowers are very fine. Neither in the trade. |
| 17—Juneberry | *Amelanchier Botryapium* | 5–12 | White | Moist places | As individual plants very shapely, but rather ungainly in close formation. *A. spicata* (1–4 ft.) good, but not in the trade. |
| 18—English hawthorn | *Crataegus Oxyacantha* | 5–15 | White | Dry hillsides | The May. Much cultivated and now run wild. The American *C. rotundifolia* common on L. I. and N. J., but not for sale. |
| 19—Scarlet thorn | *Crataegus coccinea* | 5–15 | White | Thickets | The closely related *C. mollis*, with scarlet fruits is effective in autumn. Not in the catalogues. |
| 20—Dwarf thorn | *Crataegus uniflora* | 2–8 | White | Dry sandy place | Quite indifferent as to locality when cultivated. *C. macracantha* with long spines is often 10 to 15 feet. Not in the trade. |
| 21—Beach plum | *Prunus maritima* | 1–4 | White | Sandy places | Fruit makes excellent jelly. Very successful near the sea. *P. cuneata* better grown near moist rocks. |
| 22—Sand cherry | *Prunus pumila* | 3–6 | White | Dry places | Splendid in masses or small hillocks. Will grow in almost pure sand. *P. Gravesii* not in the trade. |
| 23—Prickly ash | *Xanthoxylum Americanum* | 6–18 | Green | Shaded places | Will also grow in ordinary garden soil. The large compound leaves gives splendid foliage effects. |
| 24—Bladder nut | *Staphylea trifolia* | 6–20 | White | Indifferent | Usually about 10 feet in our latitude. The showy pods stay on most of the winter. Flowers not showy. |
| 25—Leatherwood | *Dirca palustris* | 2–5 | Yellowish | Shaded places | In masses under trees or along shaded walks it is most welcome. Useful in a shaded rockery. |
| 26—Pinkster flower | *Azalea nudiflora* | 2–7 | Pinkish-white | Shaded wood† | A blaze of color when planted in masses with other Azaleas. Can also be grown successfully in the open. |
| 27—Deerberry | *Vaccinium stamineum* | 1–4 | Purple-green | Dry woods† | Flowers not showy, but purple fruits are attractive. Best not disturbed or transplanted after setting out. |
| 28—Red-berried elder | *Sambucus pubens* | 3–10 | White | Cool woods | Easily grown in the garden but most successfully under trees or along the north side of the house. |
| 29—Black haw | *Viburnum prunifolium* | 5–18 | White | Indifferent | After becoming a small tree. A magnificent snowy shrub in the spring. Fruits black. |
| **May** | | | | | |
| 30—Silky willow | *Salix sericea* | 6–15 | Yellow-green | Moist places | With the other willows useful for filling in low moist places. Leaves ashy beneath. Catkins showy. |
| 31—Wild gooseberry | *Ribes Cynosbati* | 3–5 | Greenish-yellow | Rocky woods | Better grown in the shade and in rich soil. The bristly fruits are odd persistent features of this shrub. |
| 32—Black chokeberry | *Aronia nigra* | 3–8 | White | Indifferent | Shiny black fruit stays on until December or January. Somewhat scraggy, except in masses. |
| 33—Mountain holly | *Ilex monticola* | 4–10 | Greenish-white | Cool shade | Flowers not showy but the red fruits showy all the autumn. Do not attempt to grow in hot, dry places. |
| 34—Blue huckleberry | *Vaccinium vacillans* | 1–4 | Pink | Dry soil† | The profusion of tiny bell-like flowers appearing with the leaves make this attractive. Fruits purple-black. |
| 35—Common lilac | *Syringa vulgaris* | 4–10 | Lilac | Ordinary garden soil | Cultivated everywhere and sometimes escaped from gardens. There are scores of attractive hybrids and forms. |
| 36—American fly honeysuckle | *Lonicera ciliata* | 2–4 | Greenish-yellow | Moist woods | Easily grown in ordinary garden soil, but prefers shade. Best planted along shaded walks. |
| 37—Fly honeysuckle | *Lonicera Xylosteum* | 2–6 | Pinkish-white | Indifferent | Sometimes an escape from cultivation. The scarlet berries are showy in the early fall. |
| 38—Tartarian bush honeysuckle | *Lonicera Tatarica* | 3–8 | Pinkish-white | Indifferent | *L. oblongifolia* with purplish-yellow flowers in May and June is attractive. Not in the catalogues. |
| **May-June** | | | | | |
| 39—Chinquapin | *Castanea pumila* | 5–8 | Brownish-green | Dry soil | Apt to be affected with the chestnut blight. The long catkins and fruits are interesting but not showy. |
| 40—Magnolia | *Magnolia glauca* | 4–10 | White | Swamps and bogs | Can also be grown very well on dry ground and in any garden soil. Fruits rose red. |
| 41—Common barberry | *Berberis vulgaris* | 3–8 | Yellow | Common garden soil | After an escape from cultivation. The well-known scarlet berries showy in autumn. |
| 42—Virginian willow | *Itea Virginica* | 2–4 | White | Moist places | When massed either alone or with *Clethra alnifolia* it makes attractive patches of white. |
| 43—Syringa | *Philadelphus coronarius* | 4–10 | Cream-white | Indifferent | Many horticultural forms of this are in the trade. All are useful. Fruits brownish. |
| 44—Fetid currant | *Ribes prostratum* | 3–6 | Greenish-yellow | Cool moist places | Not easily grown as it grows naturally on the cool mountain slopes. Fruits red. |
| 45—Opulaster | *Spiræa opulifolia* | 3–9 | White | Indifferent | Splendid masses of flowers as it is a profuse bloomer. Aften from 3–6 feet wide and very bushy. |
| 46—Cockspur thorn | *Crataegus Crus-galli* | 6–14 | White | Dry soil | One of the most commonly cultivated of our native shrubs. Very thorny and a good hedge plant. |
| 47—Pear haw | *Crataegus tomentosa* | 4–12 | White | Indifferent | The dull red fruits cling on most of the winter. A profusely flowering shrub. |
| 48—Bastard indigo | *Amorpha fruticosa* | 4–10 | Violet-purple | Rich soil | A gorgeous flowering shrub, which in masses is unrivalled. Repays good cultivation and care. |
| 49—Staghorn sumac | *Rhus typhina* | 6–15 | Green | Dry places | Autumnal coloring magnificent. On a low hill very effective in large masses. |
| 50—American holly | *Ilex opaca* | 6–15 | Greenish-white | Moist woods | Best transplanted in the spring when all the evergreen leaves should be knocked or clipped off. |
| 51—Buckthorn | *Rhamnus cathartica* | 8–16 | White | Indifferent | This and No. 52 both European shrubs that have run wild in this country. Neither is showy in flower. |
| 52—Alder buckthorn | *Rhamnus Frangula* | 4–11 | Greenish-white | Indifferent | Its natural home is in swamps and bogs, but generations of garden culture has made it at home. |
| 53—Flame azalea | *Azalea calendulacea* | 2–7 | Orange-yellow, red | Dry woods† | The showiest of all our native shrubs. Not very common in the wild state. |
| 54—Mountain laurel | *Kalmia latifolia* | 4–10 | Pinkish-white | Dry woods† | In masses under the shade of trees a wonderfully effective shrub. Prefers rich soil. |

Plants marked thus (†) belong to the heath family and require special conditions as indicated in text.

PLANTING TABLE FOR OUR NATIVE SHRUBS — *Continued*

| COMMON NAME | BOTANICAL NAME | HEIGHT (FEET) | COLOR OF FLOWERS | PREFERRED HABITAT | REMARKS AND NOTES |
|---|---|---|---|---|---|
| 55—Swamp huckleberry | *Vaccinium corymbosum* | 6–15 | White | Swamps and wet woods† | Flowers not very showy but the fruits are the finest of the tribe Will not tolerate dry places. |
| 56—Low blueberry | *Vaccinium Pennsylvanicum* | 1–4 | Pinkish-white | Dry or sandy soil† | Often grows in almost pure sand in the pine-barrens. Neither flowers nor fruit showy. |
| 57—Hobble-bush | *Viburnum alnifolium* | 3–6 | White | Cool, moist shade | The outer circle of flowers in each cluster very much larger than the inner. Does not like hot places. |
| 58—Dockmackie | *Viburnum acerifolium* | 3–8 | White | Dry woods | Looks like a small maple tree. Useful as it will grow almost anywhere. Fruits black. |
| **June-July** | | | | | |
| 59—Hydrangea | *Hydrangea arborescens* | 4–9 | White | Indifferent | Thoroughly hardy and often easier grown than the more showy exotic species. |
| 60—Meadow rose | *Rosa Virginiana (blanda)* | 2–4 | Pink | Indifferent | Along paths and roadsides it scrambles everywhere with apparent cultural indifference. |
| 61—Sweet brier | *Rosa rubiginosa* | 3–6 | Pinkish-white | Indifferent | Well repays good treatment when it often becomes a bushy shrub 4 to 5 feet in diameter. |
| 62—Pasture rose | *Rosa humilis* | 1–3 | Pink | Indifferent | The beautiful large petals very evanescent. It can be best grown in a moist place. Showy. |
| 63—Water ash | *Ptelea trifoliata* | 6–18 | Greenish-white | Shade | Flowers inconspicuous but the compound leaves make it a good foliage plant. Wood very brittle. |
| 64—Black sumac | *Rhus Copallina* | 5–15 | Greenish-white | Dry places | The large compound leaves a beautiful scarlet in the autumn. Profuse bloomer and fruits persistent. |
| 65—Inkberry | *Ilex glabra* | 3–6 | Greenish-white | Moist woods | The more rare *I. mucronata* of swamps is interesting botanically but must be collected from the wild. |
| 66—Winterberry | *Ilex verticillata* | 6–18 | Greenish-white | Swamps | Splendid scarlet fruits cling on in large clusters most of the winter. Often easily grown in the garden. |
| 67—Strawberry bush | *Euonymus Americanus* | 3–7 | Greenish-pink | Low woods | Flowers small and inconspicuous but followed by red fruits that last until December. A slender plant. |
| 68—Burning bush | *Euonymus atropurpureus* | 8–15 | Purple | Indifferent | European shrub much cultivated and now widely established as a wild plant. Fruits red and showy. |
| 69—New Jersey tea | *Ceanothus Americanus* | 2–6 | White | Shade | Effective as massed plantings. The leaves the source of tea in Revolutionary times. A profuse bloomer. |
| 70—Kinnikinnik | *Cornus Amomum* | 3–10 | White | Indifferent | Purple twigs effective in winter. The reddish-twigged *C. asperifolia* effective but not on sale. |
| 71—Red osier dogwood (miscalled kinnikinnik) | *Cornus stolonifera* | 3–12 | White | Indifferent | Twigs reddish-purple; and fine in masses for its winter color harmonies. Easily grown from cuttings. |
| 72—Cornel | *Cornus alternifolia* | 3–10 | White | Indifferent | The bright green twigs which keep their color all winter make it attractive grouped with Nos. 70 and 71. |
| 73—Swamp honeysuckle | *Azalea viscosa* | 3–6 | Pink and white | Swamps† | Rather shy of dry places but easily replaced in such places by the *A. canescens*, which must be collected. |
| 74—Rhododendron | *Rhododendron maximum* | 4–18 | Rose-white-purple | Woods† | Old plants, almost tree-like, should never be disturbed. Be careful to nip all fruits as soon as they appear. |
| 75—Sheep laurel | *Kalmia angustifolia* | 1–3 | Purple-crimson | Low, moist places† | The rare *K. glauca*, not in the trade, is very much worth while. Neither is happy in open dry places. |
| 76—Leucothoë | *Leucothoë racemosa* | 5–12 | Cream-white | Swamps† | The glossy practically evergreen leaves make an effective winter showing. Can be grouped with Nos. 74, 77, and 78. |
| 77—Stagger bush | *Pieris Mariana* | 1–4 | Pinkish-white | Sandy soil† | Isolated plants are apt to be sprawling, but when massed the delicate flowers make attractive patches of color. |
| 78—Privet andromeda | *Xolisma ligustrina* | 4–9 | White | Moist places† | Leaves partially evergreen, and dark glossy green in color. A profuse bloomer with persistent fruits. |
| 79—Elderberry | *Sambucus Canadensis* | 5–15 | White | Indifferent | In large clusters most effective as a screen. Will grow very well along a stream or pond. Fruits "mussy." |
| 80—Cranberry bush | *Viburnum Opulus* | 3–12 | White | Indifferent | Profuse masses of flowers and large clusters of scarlet berries make it most useful all the year. |
| 81—Withe rod | *Vibrurnum nudum* | 2–8 | White | Indifferent | The *C. pubescens* of rocky woods equally good but not offered for sale. Fruits blue-black. |
| 82—Appalachian tea | *Viburnum cassinoides* | 2–8 | White | Moist places | *V. Lentago* with black fruits useful, but must be collected. Leaves of *V. cassinoides* glossy and dark green. |
| **July-August** | | | | | |
| 83—Hard hack | *Spiraea tomentosa* | 1–4 | Pink-purple | Low ground | The ashy underside of the leaves, contrasted with the pinkish-purple flowers is a novel combination. |
| 84—Shrubby cinquefoil | *Potentilla fruticosa* | 2–4 | Yellow | Moist places | One of the few yellow flowered shrubs that are used. Sometimes winter kills near New York. |
| 85—Swamp rose | *Rosa Carolina* | 4–7 | Rose colored | Moist places | Can also be successfully grown in ordinary garden soil, well manured. Flowers soon withering in open sunlight. |
| 86—Smooth sumac | *Rhus glabra* | 3–12 | Greenish | Dry places | Grouped with Nos. 49 and 64, it gives a wild touch to the landscape. Autumn color gorgeous. |
| 87—Hercules's club | *Aralia spinosa* | 6–15 | White | Low ground | Large compound leaves 3 to 4 feet long, make this the foliage plant *par excellence*. Flowers inconspicuous. |
| 88—Sweet pepperbush | *Clethra alnifolia* | 3–8 | Cream-white | Low ground | Fragrant flowers followed by persistent fruits, a sturdy habit and bushy outline make this a favorite. |
| 89—Button bush | *Cephalanthus occidentalis* | 5–15 | Cream-white | Moist places | Best not attempted much away from water, and in such situations often becoming almost tree-like. Flowers fragrant. |
| 90—Snowberry | *Symphoricarpos racemosus* | 2–6 | White | Indifferent | The flowers are not showy but the conspicuous white berries stay on all winter, thus valuable for winter effect. |
| 91—Coralberry | *Symphoricarpos vulgaris* | 1–4 | Pink | Indifferent | Much like the preceding but the red fruits are not so persistent. Forms a wide spreading bush. |
| **September-December** | | | | | |
| 92—Witch hazel | *Hamamelis Virginiana* | 5–15 | Yellow | Moist shade | Flowers later than any other native shrub, often after all the leaves have fallen off, and the first frosts arrive. |
| 93—Heather | *Calluna vulgaris* | 1–2 | Pinkish-white | Sandy places | Rather shy in its few American localities. Near the coast from Massachusetts to southern New Jersey it should do well. |
| 94—Groundsel tree | *Baccharis halimifolia* | 2–5 | Whitish-green | Dry soil | Best transplanted in the spring as its late flowering makes autumnal activity too great for easy transplanting then. |

*Plants marked thus (†) belong to the heath family and require special conditions as indicated in text.

Shrubs are better than flowers against a building because the flowers are too small to support it and have no winter value. Shrubs give flowers or color enough and last longer

This picture shows an application of Rule 1. Hide unsightly objects. This shrubbery completely screens a high wall. Mr. W. M. Johnson's, Hackensack, New Jersey. J. T. Withers, landscape architect

# The Artistic Way of Using Shrubs — By Wilhelm Miller, New York

SHRUBS ARE BETTER FOR FRONT YARDS THAN FLOWERS, AND A BORDER IS BETTER THAN A HEDGE — ANY BEGINNER CAN PLAN BETTER HOME GROUNDS BY USING THESE SIMPLE RULES AND CONVENIENT TABLES

IF YOU cannot afford to engage a landscape gardener you should rejoice at the foregoing admirable lists of shrubs by Mr. Taylor. For they will enable you to plan much better grounds than you see generally, and without extra cost. Everywhere you see three kinds of yards which look good to a beginner but are unsatisfactory after a year's experience in gardening.

The first kind of yard you see everywhere has flowers around the base of the house or in beds in the lawn. But flowers are not tall enough or permanent enough to give support and dignity to a house. They give only color and they have no value in winter. Shrubs can do all these things better than annuals or perennials.

The second type of yard you see everywhere has grass and privet hedges. (There are 10,000 examples at the seashore.) These yards are neat, but monotonous and artificial. It is a waste of money to trim hedges. An informal border of shrubbery is more artistic because it is more natural and blends your place with the landscape. It has more variety and interest every day of the year and it costs no more.

The third kind of yard you see everywhere consists of showy trees and shrubs scattered over the lawn. To scatter shrubs is distracting; to group them at the sides of the lawn is artistic. To use cut-leaved, weeping, and variegated plants is gaudy; normal varieties are showy enough and in better taste.

All these in artistic ways come from considering only flowers or color. The artistic way is to consider everything. The artistic yard is private — not exposed to the public gaze. It shuts out unsightly objects. It is sheltered from wind and dust. It has a pretty view — something better than passing automobiles. It is attractive the year round — not merely in summer or when roses bloom. It is planted with permanent materials, not tender plants or flowers that must be renewed every year. It is cheap to maintain compared with a show place. And it need not cost one dollar more than a yard peppered with Colorado spruce, golden elder, purple-leaved barberry, and cut-leaved Japanese maples.

Where can you see such yards? In Winnetka, Ill., which is perhaps the most artistic suburb in America. There are twenty-seven small places in that suburb of Chicago designed by Mr. O. C. Simonds.

I will tell you just how a great landscape gardener designs home grounds. You can do it yourself — not as well as the professional — but well enough to produce a hundred times as much comfort, beauty, and pleasure as the ordinary place shows.

RULE 1. — *Hide unsightly objects.* Perhaps a few extra-large shrubs will hide outbuildings or a fence. Probably you will need evergreens or vines to hide barns or walls. Put stakes in the ground where these screen plants are to stand.

RULE 2. — *Surround your property with an irregular belt of trees and tall shrubs.* This is to protect you from thieves, animals, wind, dust, germs, and curious eyes. It is to give the children a winter playground and allow the family to work, read, rest, sew, eat, and live outdoors as privately as indoors. Also it is to be a background for flowers. Therefore, select first your trees and put a stake where each is to stand. Then consult the list of tall shrubs for fillers.

RULE 3.— *Frame the best views.* Do not break this precious belt of shrubbery except where there is a chance to see some beautiful object in the distance, e. g. mountain, hill, lake, river, brook, meadow, church spire, or beautiful building. Carry your tall shrubs right down to the front sidewalk, but allow one glimpse of your house from the street. Study the point from which your house appears to the best advantage and put a stake there. Select low shrubs for that point so that people can look over them and see part of your house — not all. For as Mr. Simonds says, "A glimpse is better than the whole thing."

RULE 4. — *Provide year-round interest.* There is no trouble about spring and fall, because most shrubs bloom in spring, and in the autumn their leaves are as brilliant as flowers. Therefore choose from the list a few shrubs that bloom in July and August. For winter beauty choose shrubs with brightly colored berries or twigs, e. g. barberries, high-bush huckleberry, multiflora rose, golden and salmon-barked willow.

RULE 5. — *Have 95 per cent. of your material native to America.* Such plants as a class, live longer and cost less to maintain than European plants or horticultural varieties. The American plants will make your place blend with the environment; foreigners and abnormal varieties will make it stand out in violent contrast.

### WHAT I WOULD AVOID

Personally I would carry these principles still farther, e. g. I would —

Illustrating Rule 2. Surround your place with an irregular border of trees and tall shrubs and leave the lawn open

Avoid all *double-flowered* varieties because they are more artificial. The single snowballs and hydrangeas do not bloom as long but they are more beautiful because more characteristic in form. Double hydrangeas are top-heavy and gross by comparison.

Avoid all *abnormally colored* shrubs, e. g. golden elder, purple-leaved barberry and everything you see in the catalogues marked "variegata" or "fol. var." Common red-berried elder and common barberry are showy enough. Green-leaved plants never get monotonous because they are not gaudy.

Avoid all *cut-leaved* shrubs, e. g. elders, and brambles. I do not want artificially shredded foliage. When I need fine-leaved plants I use species that are naturally fine-leaved, e. g. sumachs, tamarisks, aralias.

The only kind of garden you can leave for a summer without seriously impairing its beauty is a shrubbery garden. Mr and Mrs. Charles Hutchinson, Lake Geneva, Wis.

Avoid all *magenta* and near-magenta flowers and berries, e. g. summer blooming spireas, red bud, rose of Sharon, mezereum. If you omit these you cut out nine tenths of the color discords.

Avoid *short-lived* material, e. g. ornamental cherries, peaches, Japan quince, English hawthorn and garden roses. Garden roses belong in the garden, not in the shrubbery or front yard.

### WHAT I WOULD PLANT

For *tall trees* I would choose from white pine; hemlock; red and sugar maples; pin, red and scarlet oaks.

For *small trees* I would use flowering dogwood and a great variety of magnolias.

For *tall shrubs* I would use mostly shrubby dogwoods and viburnums. Have a great variety of Cornus and Viburnum. They are the most valuable genera because they give you color thrice a year — flowers, fruit, and autumn foliage.

For *medium-sized* shrubs I would use our native sumachs, hydrangeas, barberry, bayberry, sweetscented shrub, sweet pepper, prairie rose, elder; the flame, tree and Vasey's azalea; button bush, red chokeberry, white fringe, hazel, and the medium-sized dogwoods and viburnums.

For *low* shrubs I would use largely yellow root.

The *indispensable foreigners* to me are: lilacs on their own roots, mock orange, weigela, Van Houtte's spirea, forsythias, *Magnolia stellata*, dwarf horse-chestnut; *Rosa rugosa, multiflora*, and *Wichuraiana;* the single white althea, the single hydrangea, *Aralia pentaphylla*, red-twigged dogwood, honeysuckles, Regel's privet, and Japanese barberry (*Berberis Thunbergii*) — the best low shrub in existence.

But I do not ask you to accept my personal taste. Just follow those five simple rules as far as you can, leave the centre of the lawn open and you will have all the benefits above mentioned and more. For your place will get finer every year. You can have two gala seasons, spring and fall, when you can invite a lot of friends. You will never have a rush season, as you do with annuals and perennials, for the main work is pruning and you can do that a little at a time. Your place will be more dignified and attractive the year round than by the other three systems above mentioned. And this is the only kind of garden which you can leave for a summer without its being seriously impaired.

If you must economize buy small-sized shrubs and in three or four years they will attain their full beauty.

The list I have given is plenty large enough for 999 out of every 1,000 beginners in city, suburbs, and country.

Why poison the landscape with a gigantic outdoor chromo — crazy quilt of golden elder, purple barberry, blue spruce, blood maple, and all manner of cut-leaved, variegated, and weeping trees and shrubs? Why copy the worst taste of all countries! Come on! Let us plan something artistic and American!

# How to Choose Annuals for Cutting—By Adolph Kruhm, Ohio

### THE TEN MOST EASILY GROWN ANNUALS THAT GIVE FLOWERS WHICH LAST LONGEST IN WATER WHEN CUT—WHAT THE HOUSEKEEPER WANTS TO KNOW IN PLANTING FOR INDOOR DECORATION

ALL flowers may be divided into two broad classes according to their usefulness; they are grown either to ornament our gardens as growing plants or to beautify the home when cut. The principal points that should guide us in the selection of varieties for either purpose are: for the first, the length of their blooming season outdoors; and for the second, the lasting qualities of the flowers after being cut.

In order to prove suitable for cutting, flowers must possess one or all of the following characteristics in a greater or less degree: 1. Long stems; 2. Harmonious colors; 3. Pleasing shape and form; 4. Fragrance.

Please note that the point usually emphasized most — fragrance — is really the least important when it comes to the final test. Of what use would be a fragrant dandelion? It has none of the other most essential characteristics. But look at the aster — it presents the strongest kind of a combination of the other three important features and no one, on that account, looks for a fragrant aster!

Another desirable, though not essential requisite of a cut flower, is its adaptability for use with other flowers. It often greatly handicaps an otherwise splendid flower to be of unique color, especially if that color is rather vivid. I have in mind the only serious objection that existed against the golden orange daisy, Dimorphotheca. Its lustrous golden orange flowers would not "blend" well with anything but white, and if white flowers of the proper character were lacking, the finest lot of orange daisies would go begging. A great collection of Dimorphotheca hybrids is now on hand to lessen the difficulty.

To be confronted with inquiries about flowers for specific purposes soon creates the tendency in one's mind to consider definite standards. The classes and varieties named below have come up to the requirements of good cut flowers with thousands of planters throughout this country. Allowances must be made for statements in the tabular record on account of variations in soil and climate in different states; but the average holds good, and I feel I may safely assert that, all things considered, the amateur is likely to get more satisfaction under trying conditions out of the collection recommended below than out of any other ten easily grown annuals for cut flowers.

Asters deservedly head the list by reason of their merit. Varieties considered here are the Comet asters, Paeony Perfection and Branching asters. Of these, the lastly named hold up longest after being cut. However, the Comet asters are the most graceful, and more free-flowering than either of the other two. In every class is found a complete assortment of colors, so that every taste may be satisfied. The almost total crop-failure of aster seeds in Europe should enable us to become more intimately acquainted with our magnificent American asters. To help us over the loss abroad, quite a number of most beautiful new creations in asters will be found offered in seed catalogues this year.

Celosias are included in this assortment because of the massive character of their flowers. They are useful to create effects not obtainable with any other annual flower. A single plant of the ostrich plume type (the only one considered here) will make a magnificent bouquet by itself. Two or three, displayed in a large vase will prove a very brilliant object, They last for a week, if water is changed several times. One sort named Pride of Castle Gould, is excellently adapted for growing in pots.

The giant flowering sweet sultan, *Centaurea imperialis*, I am tempted to call an ideal annual for cutting. With a long blooming season it combines unusually free flowering qualities. The flowers are of beautiful shape, run mostly in delicate light and lilac colors, and are carried on substantial stems which are the delight of the florist. Good keeping qualities and a pleasing fragrance top off the good characteristics of this improved member of the cornflower family. For best effects, centaureas should be displayed in connection with other flowers which furnish foliage or undergrowth. Try them combined with baby's breath (Gypsophila), or other flowers of a like character.

The annual coreopsis (calliopsis) deserves mention for two reasons: it blooms freely and faithfully, and in the one known as Drummondii we have about the only really long-stemmed yellow annual available throughout summer and fall. Calliopsis will prove most pleasing, displayed by itself in tall, slender vases. The pretty daisy-like flowers show charming combinations of yellow and brown, both colors being often found in the same flower. Calliopsis lasts for a week or more after cutting, even during the hot summer months.

When most other flowers have forsaken us, when the garden begins to look bleak and dreary, and the chill of winter is in the air — then the cosmos rules supreme. It pleases us with beautiful flowers in

Love-in-a-mist, a somewhat neglected plant, but always interesting. Blue flowers and finely cut leaves

Painted tongue. Comes in a remarkable variety of color blendings

white, pink and crimson, supplemented by artistic, fern-like foliage with the fragrance of delicate herbs about it. Of late, several early flowering kinds have been evolved, so that now we may enjoy cosmos from August until frost. The variety Lady Lenox marked a big step in advance when introduced a few years ago. In it we have great size of flowers, a lovely illuminating shade of pink, stems several feet long, and a lasting quality after cutting not surpassed by any other annual.

The golden orange daisy (Dimorphotheca) has only been known in this country for about four years, but its merit instantly brought it deserved recognition. The stems of Dimorphotheca average 10 to 12 inches long and are strong and substantial. Some new hybrids contain sufficient color combinations to satisfy everybody, while the shape of the daisy-like flowers makes them most pleasing. The absence of fragrance is more than compensated by their remarkably long flowering season and the durability of flowers after cutting. In hottest August weather they will last a week without losing their lustre, if the water is changed frequently.

That old time favorite, Love-in-a-mist (Nigella) is one of the most striking annuals in existence. The bright blue (or white) flowers are enveloped by dainty, finely cut foliage which is responsible for another name this lovely flower does not deserve — Devil-in-the-bush. Nigellas are so easily grown, and so entirely distinct in every way that they deserve more attention. Strong healthy bushes about two feet tall bear the long-stemmed, artistic flowers which in themselves form an ideal color combination, blue and green.

Painted tongue (Salpiglossis) belongs to the same class botanically as the petunia. The peculiar "sticky" character of foliage as well as shape of flowers strongly remind one of this fact. Flowers are borne on splendid stiff long stems, usually six to ten branching out from one strong centre stem. They are funnel-shaped and afford the most brilliant color combinations imaginable. Usually the funnel is of a rich, velvety color, lined with heavy veins of strongly contrasting shades. The newer types of salpiglossis are a revelation in floral beauty.

The ostrich plume has very strong colors, but often fits well into decorative schemes

The newer hybrids of the orange daisy, in many light shades are especially welcome

Mourning bride (scabiosa), is one of the most easily grown and most appreciative annuals in cultivation. For furnishing an abundance of beautiful cut flowers during a long season, it is in a class of its own. Scabiosas have long, strong (but not stiff) stems, come in a dozen or more attractive colors, almost ball-shaped and possess a delicate fragrance. All these characteristics make scabiosa one of the few "ideal" cut flowers. For decorative purposes, used alone or combined with stiff-stemmed flowers they are unexcelled.

Sweet peas might be called the ideal cut flowers for all. Unfortunately they deteriorate rapidly during the hot summer months, though a special study of the subject may teach you how to keep them at their best the longest. Great strides toward perfection have been made with this lovely flower during the last few years. Every desirable color and shade has been evolved and the most beautiful color combinations in one flower are found in sweet peas. Eight years ago, when the "Spencer" type arrived, many thought the goal of sweet pea perfection was reached. But behold! — 1912 brings us a brand new type again, the "Duplex" Spencer with magnificently waved double standards.

ANNUAL FLOWERS THAT LAST LONG AFTER CUTTING

| COMMON NAME | BOTANICAL NAME | INCHES DEEP TO SOW SEED | INCHES APART TO TRANSPLANT | HEIGHT (FEET) | BLOOMING SEASON | DIAMETER FLOWERS (INCHES) | LASTING QUALITIES (DAYS) | COLOR | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| China aster | *Callistephus Sinensis* | ¼ | 12 | 1½ | July-Oct. | 3–4 | 6–10 | Various | Fine for bedding |
| Ostrich plume | *Celosia argentea*, var. | ⅛ | 24 | 3 | July to frost | 4–6 | 4–8 | Mostly yellow and crimson | Self seeds freely |
| Giant sultan | *Centaurea imperialis* | ⅛ | 10 | 2 | July–Sept. | 2–3 | 7 | Light and lilac shades | Good mixed in herbaceous border |
| Calliopsis | *Coreopsis tinctoria* | ⅛ | 10 | 1 | July to frost | 2 | 5 | Yellow and brown | Splendid for massing among shrubs |
| Cosmos | *Cosmos bipinnatus* | ½ | 12 | 5–8 | Aug. to frost | 2–4 | 7 | White, pink and crimson | Fine for backgrounds |
| Orange daisy | *Dimorphotheca aurantiaca* | ⅛ | 12 | 1 | June to frost | 2½ | 7 | Orange-yellow, and lighter hybrids | Unsurpassed for bedding |
| Love-in-a-mist | *Nigella Damascena* | ⅛ | 6 | 1½ | June–Aug. | 1½–2 | 5 | Bright blue | Excellent for centre of small beds |
| Salpiglossis | *Salpiglossis sinuata* | ⅛ | 10 | 2 | Aug. to frost | 2½ | 4–6 | Various | Create splendid effects mixed in herbaceous border |
| Mourning bride | *Scabiosa atropurpurea* | ⅛ | 12 | 2 | July to frost | 2½ | 5–8 | Various | Create splendid effects mixed in herbaceous border |
| Sweet peas | *Lathyrus odoratus* | 2–3 | 6 or 12 | 4–6 | June–Aug. | 2–2½ | 4–7 | Various | Grow as a hedge on trellises |

# Five Years' Experience With Dwarf Fruit Trees

## By G. M. Stack, Connecticut

MY OBJECT in planting dwarf fruit trees was to secure a variety of the best apples and pears within as small a space as possible. Our vegetable garden was the only desirable place at hand and if any trees were to be planted they must be of a size that would not shade the ground to an extent that would be detrimental to the vegetables. Why not plant the whole garden to dwarf trees and secure both fruits and vegetables off the same ground? This was done five years ago. I ordered 100 dwarf apples and am so satisfied with the results obtained from these trees that I am doubling the size of my orchard this spring.

The trees were planted ten feet apart each way because I wanted to use some of the space for vegetables and also to allow for horse cultivation; otherwise they could have been put closer.

Bartlett pear in frut the same year as planted

The nurserymen could not supply me with all the varieties desired, so I purchased one year old trees of such varieties as they offered that would make a strong growth on the Paradise or dwarf stock, these to be top worked with cions of the desired varieties after they were established. Baldwin and Greening were bought in the greatest numbers and only a few of Red Astrachan, Alexander, Stayman's Winesap, Spy, Russet, Wealthy, Duchess, and Fameuse.

Still other varieties were offered but as I wanted several varieties not found in the lists I concluded to secure the cions from local orchards and grow my own trees by top working the common varieties at hand. Yellow Transparent, Gilliflower, Lady, Twenty Ounce, McIntosh, Sweet Bough, Talman Sweet, Fall Pippin, Ben Davis, Gravenstein and Spitzenberg were thus added, and I still have other trees to be made over. The pear trees were purchased, in only four varieties; Bartlett, Seckel, Clapp Favorite, and Duchesse d'Anjou, and all seem to be making good growth.

By top working your own trees you can secure trees of known quality. For example, I visited the best orchards in the locality and selected grafts from the best trees of certain varieties in the locality. That it pays to select your parent tree, I think, is quite proven from the fact that the trees raised in this manner are a year ahead of the others in bearing.

By "top working" I mean this: The tree I buy has its top of some known variety (Baldwin or Greening, for example) on Paradise roots. I change this top over to whatever variety is desired, either by budding or grafting on to the branches of the Baldwin or Greening, as the case may be. Northern Spy worked this way, also Gravenstein and Fall Pippin, I find give much better trees than if grown direct on the Paradise stock.

There are two methods by which to secure the new varieties on the trees, and I use both. The first is to bud the trees in August on the new wood formed the same season. The second, to graft the new wood the following spring.

I prefer to bud the trees in August because I can place the buds where they are needed to balance the tree and if they fail to grow I still have a chance the following spring to graft them. I watch the trees for the time when the bark will separate from the wood and then set about to top work my trees. There is not the amount of work in budding that is encountered in grafting, and if the buds fail to grow the branches are not damaged to the extent that they are by grafting. Again some varieties, like the Lady apple, give poor grafting material because the wood is so short jointed, and budding is therefore easier.

I select budding material from thrifty trees that are in fruit and gather the budding wood from the annual growth and not from the water sprouts. The process is ordinary budding as has been previously described in THE GARDEN MAGAZINE. Two buds are used on each branch and always placed to the outside — one three inches above the other, and not in line. If one bud dies there is still a second chance of the branch having the new variety on it. The portion of the branch of one year old wood above the bud is cut off in the spring if the bud has survived. I have had but little trouble in budding trees in this manner but have had considerable trouble with splitting the trees in spring grafting.

The trees that were grafted in the spring were whip grafted. I like to have the stock a little advanced toward sending out the buds before attempting this work. The cions are secured the year before and packed in sawdust during the winter and if they are kept slightly moistened they will be in the right condition for work at any time when the weather permits grafting. The whip and tongue graft is the easiest to make because there is more than one chance for the wood to unite and if the corresponding layers of bark of both stock and cion are brought together and securely held by waxed twine they will grow. The place where the graft is made should be waxed over and also the tip of the cion; if this is not thoroughly done the cion will not grow.

The trees in my orchard have been pruned severely each year, in order to secure a well shaped tree that would bear fruit on stout branches, because I wanted to make my trees before securing the fruit. The Bismarck apple trees had fruit on them the second season and have been in fruit every year since. Last year the trees averaged one peck to a tree and I could have harvested more if they had not been thinned. The other varieties have yielded from a dozen fruits to a peck to a tree. McIntosh, Yellow Transparent and Red

This tree is ready to be "top-worked" to any desired variety by grafting or budding (2 years old)

Vegetables and bush fruits between the trees. Fruits pay the entire cost as the orchard grows

Astrachan have yielded more than Baldwin, Spy and Gravenstein.

The varieties that have succeeded best are Greening, Yellow Transparent, Bismarck, Red Astrachan, Gilliflower, Fall Pippin and Fameuse.

Gravenstein, Spy, Duchess, Wealthy and Lady are slow growers and have not produced fruit enough to be of importance.

Baldwin is a fast growing variety but has not produced a proportional amount of fruit.

Pears bear even at an earlier age than the apples; Bartlett bore fruit the first year set, and every year since; Seckel was covered with blossoms, but has set no fruit as yet.

All my trees are budded on the Paradise stock and were received from the nursery when only one year from the bud, and branched. These trees were planted in their permanent location and pruned back to three or four buds to a branch to produce stocks for top working. I have top worked as many as a dozen such branches by budding, and have changed the entire top of the tree without the loss of a single bud by failure to unite with the stock. The trees that were to be left without top working received the same treatment in pruning the first season, except that they were again summer pruned to start the formation of fruit spurs.

It has been my experience that summer pruning promotes fruit spurs and I have pruned the trees severely with this aim in view. This work can be done in summer simply by pinching off the shoots with the fingers. These are pruned back to three or four buds in the spring, always having the top bud one that grows to the outside of the tree. I remove the shoots that cross and bind each other in the tree.

The currants and gooseberries planted between the trees have borne enough fruit to pay for the entire cost of the orchard and if there is a crop this coming year it will be clear profit.

How about the vegetables? The same amount of vegetables has been grown each year as was grown before the orchard was planted, yes, and more indeed! Before the trees were planted the space was left idle after the vegetables were exhausted; but now I try to make the best use of the space by successions and the joy of being in the fruit garden induces me to give the whole more care and attention in spraying and cultivation.

By my little experience with dwarf fruits I have found that they can be grown to better advantage in connection with vegetables than standard trees, that they will yield fruit of superior quality because they can be cared for more easily and that they offer best possibilities to the man with but limited working space. Plant some dwarf trees this spring!

BEHAVIOR OF VARIETIES

| NO. OF TREES | VARIETY | RESULTS |
|---|---|---|
| | *Apples* | |
| 10 | Baldwin . . | Four fruits to tree third year. Six each last year. |
| 5 | Greening . . | Fruit each year. |
| 5 | Russet . . | A peck per tree last year. |
| 5* | Spy . . . | Produced only one apple. |
| 4 | Falawater . | Five large apples two years ago; four to tree last year. |
| 3* | McIntosh . | Top worked two years ago; fruit buds now. |
| 5 | Bismarck . . | Fruited same year planted; peck to tree last year. |
| 3* | Yellow Transparent . . | Half bushel third year; peck to tree this year. |
| 1* | Sweet Bough | No apples. |
| 2* | Talman Sweet | Twelve apples last year. |
| 3* | Lady . . . | Three to a tree last year. |
| 2* | Spitzenberg . | Twelve to a tree last year. |
| 10 | Red Astrachan | Peck to tree last year. |
| 3* | Gilliflower. . | A half bushel per tree. |
| 3* | Twenty Ounce | One apple. |
| 5* | Fall Pippin . | A peck to a tree last year. |
| 2* | Lemon Pippin | Two to a tree last year. |
| 3* | Fameuse . . | One top worked tree produced a peck of apples. |
| 5 | Alexander. . | Two apples to one tree. (Other trees none). |
| 5 | Wealthy . . | No apples yet, but have fruit spurs. |
| 4 | Duchess . . | Two apples to entire four trees. |
| 5 | Stayman's Winesap . | Fruited two years, eight apples to tree. |
| 1* | Early Harvest | A peck last year. |
| 1* | Ben Davis . | Fruited three years. A peck last year. |
| 5* | Gravenstein . | Fruited three apples to tree two years ago; twelve to tree last year. |
| | *Pears* | |
| 5 | Bartlett . . | Fruited every year. Six to a tree last year. |
| 5 | Clapp's Favorite | Three to a tree last year. |
| 5 | Seckel . . . | No fruit but has blossomed each year. |
| 5 | Duchess . . | Commenced bearing two years ago. Six pears last year. |

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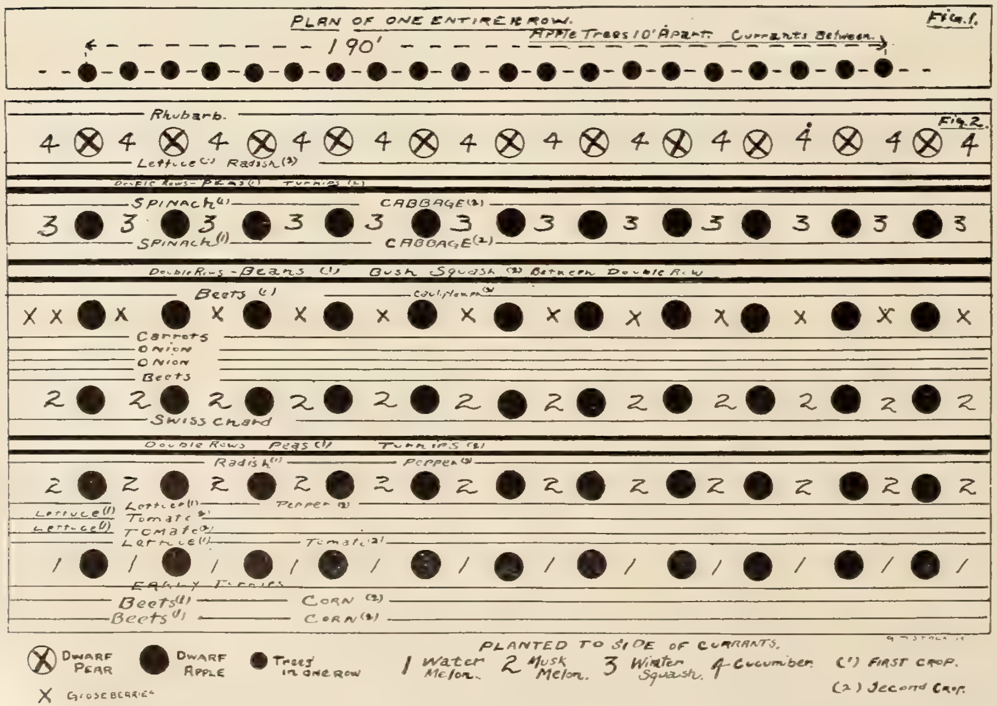
* Top worked.


PLAN OF ONE ENTIRE ROW.
Fig. 1.
190'
Apple Trees 10' Apart. Currants Between.
Rhubarb.
Fig. 2.
Lettuce (1) Radish (2)
Double Rows - Peas (1) Turnips (2)
SPINACH (1)
CABBAGE (2)
Double Rows - Beans (1) Bush Squash (2) Between Double Row
Beets (1)
Cauliflower (2)
Carrots
Onion
Onion
Beets
Swiss Chard
Double Rows Peas (1) Turnips (2)
Radish (1)
Pepper (2)
Lettuce (1)
Pepper (2)
Lettuce (1)
Tomato (2)
Lettuce (1)
Tomato (2)
Lettuce (1)
Tomato (2)
Early Turnips
Beets (1)
Corn (2)
Beets (1)
Corn (2)
Dwarf Pear
Dwarf Apple
Trees in one row
Gooseberries
PLANTED TO SIDE OF CURRANTS.
1 Water Melon.
2 Musk Melon.
3 Winter Squash.
4 Cucumber.
(1) First crop.
(2) Second crop.

The planting plan of the combination fruit and vegetable garden

## Troubles of Rose Growers

REFERRING to the rose trouble mentioned in The Garden Magazine for December, 1911, on page 222, I have long since given up growing Francesca de Kruger for the same reason as that of your correspondent. I thought it was our moist climate but it is not that which was against it. A rose growing well is no proof that one will get good roses. "Digging sheep manure about the roots of roses several times until June 1st" seems to me comical in its badness.

Our rose growers should stand more on their own feet and depend less on the trade. The trade are concerned only for the stock of one year and getting rid of it, and therefore have no opportunity of knowing how well a rose may do after several years' growth.

There seems no means of eliminating poor kinds like this. Large catalogues are full of pitfalls; rose shows, too, because a nurseryman with a large area of one kind can show blooms that are no proof of the variety being any good in the garden.

England. Wm. Robinson.

# Combination Gardens for Small Plots — By M. R. Conover, New Jersey

SUGGESTIVE PLANS FOR COMBINATIONS OF FLOWERS AND VEGETABLES IN THE AVERAGE SUBURBAN GARDEN WHERE NEITHER UTILITY NOR BEAUTY ARE TO BE SACRIFICED TO EACH OTHER

WHERE the garden space is not large and both flowers and vegetables are to be grown, a planting scheme which unites the two is not impossible, but it needs some forethought. Vegetables have in themselves ornamental possibilities which we usually ignore. Lettuce, parsley, cabbage, pea vines, corn, etc., present variations in color which are really lovely if we consider them. Of course, we cannot arrange our garden vegetables for contrast, nor in effective masses, as we do our flowers or ornamental plants; yet we need not feel that this part of the garden must be concealed nor considered remote from our flowers if convenience demands its proximity. Firm, straight rows, clear of weeds and bearing evidence of superior culture, are an excellent foil for some flower gardens.

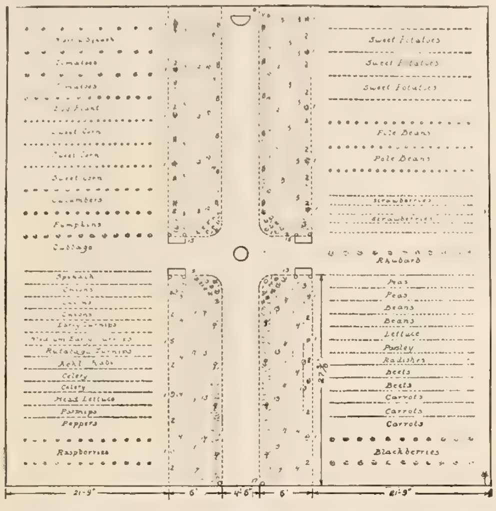
The accompanying plans are intended to suggest modes of combining the flower garden with the vegetable areas so as to present an attractive whole, restful and pleasing to the worker or the leisurely inclined. The plans as given are for garden plots 60 x 60 ft., but can easily be adapted to tracts of different form and size, and are reproduced from actual gardens that have given real pleasure to their owners. I do not urge that these plans are ideal or the best possible; but only that they please, and may help other owners of small lots to solve what often is a hard problem.

Plan No. 1 provides for flower beds through the middle of the tract with vegetables on either side. The vegetable areas give a total of 2,610 sq. ft. for vegetables. Some space is saved within these plots by running the rows lengthwise of the patches.

The main entrance is arbor-like in its effect but in reality is merely a vine-covered arch. Genuine arbors, however, are provided at the termination of the shorter walks. They are not only convenient resting places but are essential to the garden picture. A dial where the paths intersect and a seat or a bird font at the termination of the long paths are attractive adjuncts.

Planting dwarf evergreens at the corner of each flower section, nearest the centre of the garden, gives an agreeable emphasis to the garden's centre, effective both in winter and summer. Four dwarf evergreen trees are planted along the edge of each flower section nearest the vegetable areas. The dwarf globular arborvitæ (*Thuya occidentalis*, var. *compacta*) may be used here, or the common American arborvitæ.

Sixteen dwarf evergreens will be required for planting along the edges of the flower sections. For the groups at the intersection of the paths, thirty-six specimens of very dwarf evergreens planted eighteen inches apart will be required, or twenty specimens if planted two feet apart.



Winter Squash
Tomatoes
Tomatoes
Egg Plant
Sweet Corn
Sweet Corn
Sweet Corn
Cucumbers
Pumpkins
Cabbage
Spinach
Onions
Onions
Onions
Early Turnips
Medium Early Turnips
Rutabaga Turnips
Kohl Rabi
Celery
Celery
Head Lettuce
Parsnips
Peppers
Raspberries
Sweet Potatoes
Sweet Potatoes
Sweet Potatoes
Pole Beans
Pole Beans
Strawberries
Strawberries
Rhubarb
Peas
Peas
Beans
Beans
Lettuce
Parsley
Radishes
Beets
Beets
Carrots
Carrots
Carrots
Blackberries
27'6"
21'-9"
6'
4'6"
6'
21'-9"

References: 1. Dwarf evergreens: 2, double white hollyhocks; 3, canary yellow hollyhocks; 4, hardy yellow larkspur; 5, Formosa Giant blue larkspur; 6, yellow German iris Darius; 7, lavender German iris Frederick; 8, Triumph forget-me-not (everblooming); 9, Little Gem sweet alyssum; 10, Yellow trumpet daffodil Henry Irving; 11, purple China asters; 12, double white asters; 13, double white daffodils; 14, pansies between border planting and daffodils; 15, wistaria; 16, morning glory Empress of Japan; 17, honeysuckle.

1. — Central flower garden

These flowers will give the desired color effects in purples and yellows: Double white hollyhocks (*Althea rosea*, var. Snow White), twenty plants in each group; hollyhock, canary-yellow, for use in the groups near the centre of the garden; hardy yellow larkspur — Zalil, a sulphur yellow — sixty plants; giant blue larkspur (*Delphinium formosum*), sixty plants; yellow German iris Darius, six or eight bulbs for each group; lavender German iris Frederick, six or eight bulbs for each group; forget-me-not Triumph; sweet alyssum Little Gem; yellow trumpet daffodil Henry Irving, four dozen bulbs; pure white double narcissus (Alba plena odorata), or double poet's narcissus, four dozen bulbs; purple and double white China asters; pansies, Trimardeau Giant, Lord Beaconsfield (purple) and Trimardeau Giant Golden Crest; wistaria, four plants; morning glory Empress of Japan; Hall's Japan honeysuckle.

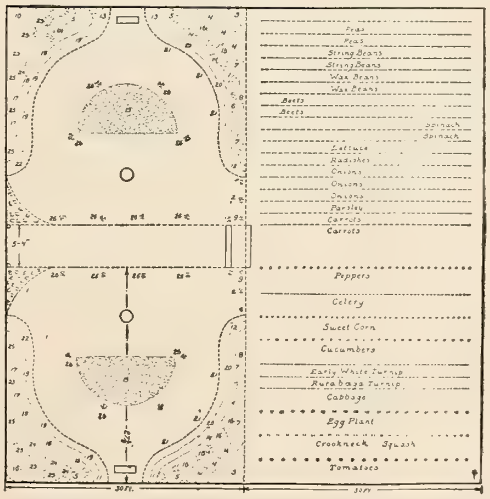
In plan No. 2, the garden tract is divided in half, the foreground being planted with flowers and the space beyond with vegetables. A path leads to the vegetable area through an arbor overgrown with the Wichuraiana or Memorial rose.

The spaces on the right and left of the path are symmetrically planned.

Except for the rose trees planted about the spaces and along the walk, and the crocus in the grass, the flowers used in this garden are white. A privet hedge three feet high surrounds the flower garden and affords a background for its flowers. On either side of the arbor are planted castor oil plants (Ricinus) and *Caladium esculentum*). Flowers are massed in the border beds. The space about the rose trees is sown with lawn grass and regularly mowed. This area is interesting in early spring because of the crocus in the grass.

Summer cypress and ornamental grasses and the foliage of the plants themselves furnish the only foil of color for the garden's bloom. Tall growing plume grass is used by way of contrast in the flower borders, nearest the seats. Hardy perennial white phlox is massed at either side of the walk near the entrance.

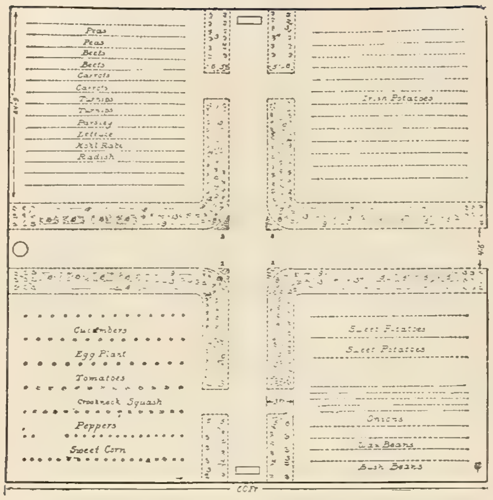
This garden requires the following varieties of flowers: Hardy white perennial phlox Joan of Arc or Mrs. Jenkins; ricinus, six plants; *Caladium esculentum*, four plants; Snow-white double hollyhock; kochia or summer cypress; plume grass (*Erianthus Ravennæ*); pure white German iris Florentine, twenty-four bulbs; Canterbury bells (*Campanula Medium*, var. *calycanthema*, or *Campanula pyramidalis*, var. *alba*); German cosmos, large-flowering and early; single pure white, fragrant Wichuraiana rose; white foxglove (*Digitalis purpurea*, var.); snapdragon Queen Victoria; ten weeks' stock Mt. Blanc; Shasta daisy; tuberose Double Dwarf Pearl; crocus Mt. Blanc (white) and David Rizzio (heliotrope), 400 of each; *Yucca filamentosa* or Adam's needle; columbine; *Aquilegia vulgaris*, var. *alba;* candytuft Empress, or Giant White Hyacinth-flowered; Margaret carnation, double



Peas
Peas
String Beans
String Beans
Wax Beans
Wax Beans
Beets
Beets
Spinach
Spinach
Lettuce
Radishes
Onions
Onions
Onions
Parsley
Carrots
Carrots
Peppers
Celery
Sweet Corn
Cucumbers
Early White Turnip
Rutabaga Turnip
Cabbage
Egg Plant
Crookneck Squash
Tomatoes
5-4"
30 ft.
30 ft.

References: 1, Hardy white perennial phlox; 2, ricinus and *Caladium esculentum;* 3, double white hollyhocks; 4, Kochia (summer cypress); 5, plume grass (*Erianthus Ravennæ*); 6, white German iris Florentine; 7, Canterbury bells; 8, white Early cosmos; 9, Wichuraiana (Memorial) rose; 10, white foxglove; 11, snapdragon Queen Victoria; 12, ten-weeks stocks Mt. Blanc; 13, Shasta daisy; 14, tuberose; 15, crocus; 16, yucca; 17, columbine; 18, white candytuft; 19, white dianthus; 20, white daffodils; 21, dusty miller (*Cineraria mari ima*); 22, double white balsam; 23, white peonies; 24, yuccas; 25, sweet pea Mt. Blanc; 26, roses trained to tree form.

2. — Foreground of flowers and lawn


Peas
Peas
Beets
Beets
Carrots
Carrots
Turnips
Turnips
Parsley
Lettuce
Kohl Rabi
Radish
Irish Potatoes
Cucumbers
Egg Plant
Tomatoes
Crookneck Squash
Peppers
Sweet Corn
Sweet Potatoes
Sweet Potatoes
Onions
Lima Beans
Bush Beans
60 Ft

References: 1, Bermuda lilies; 2, crocus; 3, dwarf cedars; 4, Annunciation lily; 5, Crown Imperial; 6, golden-rayed Japan lily (*Lilium auratum*); 7, white and pink peonies; 8, poet's narcissus; 9, pansies; 10, tiger lily; 11, German iris; 12, cannas; 13, gladiolus 14, dahlias; 15, hardy white perennial phlox; 16, hardy pink perennial phlox; 17, scarlet sage; 18, white China asters.

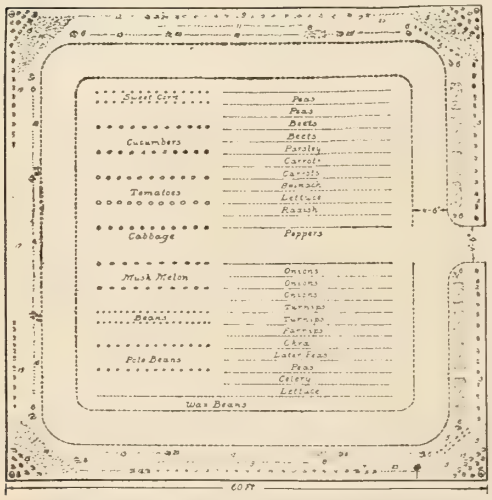
3.—The garden in four sections

white; white daffodils (*Narcissus poeticus*); *Cineraria maritima*, or dusty miller; balsam, double white; Chinese peonies; sweet peas Mt. Blanc; roses trained to tree form, Baroness Rothschild, Crimson Baby Rambler, Dorothy Perkins, Magna Charta, La France, General Jacqueminot, two of each.

In plan No. 3 a sodded walk divides the garden into four sections. The flowers are confined to narrow beds 3 feet wide leaving 2,448 sq. ft. in all for the vegetables.

The dial is at the extreme end of the walk opposite the entrance and rustic benches are at the termini of the side paths.

Small cedar trees are planted along the fence line in the rear of the dial and they are also used in the border on either side of the rustic seats where they bring into fine relief the annunciation lilies and the golden rayed Japan lilies planted near them.


Sweet Corn
Peas
Peas
Beets
Beets
Cucumbers
Parsley
Carrots
Carrots
Tomatoes
Spinach
Lettuce
Radish
Cabbage
Peppers
Musk Melon
Onions
Onions
Onions
Beans
Turnips
Turnips
Parsnips
Okra
Pole Beans
Peas
Celery
Lettuce
Wax Beans
60 Ft

References: 1, *Rhododendron maximum;* 2, privet; 3, hollyhocks; 4, cedars; 5, tulips; 6, privet; 7, rose Gen. Jacqueminot; 8, Oriental poppies; 9, cosmos; 10, May pinks; 11, snapdragon; 12, chrysanthemums; 13, May pinks; 14, lily-of-the-valley; 15, Japanese anemone; 16, sweet William; 17, coreopsis; 18, sunflower (Helianthus); 19, sunflower (Heliopsis); 20, *Spiræa Thunbergii;* 21, white lilac; 22, arborvitæ (dwarf); 23, Shasta daisy; 24, Hybrid Perpetual roses.

4.—Vegetables in centre, flowers around

On each side of the walk near the entrance are planted Bermuda Easter lilies. From this point, plantings of hardy white perennial phlox extend half way toward the centre of the garden. Scarlet sage lines the rear of these borders to the plantings of cannas at the turn. At the intersection of the walk, the plantings are similar — cannas in the background, white peonies before them and poet's narcissus at the outer edge.

Following the path toward the dial, the flower borders are planted with gladioli, pansies and pink hardy perennial phlox, white China asters and — on either side of the dial — the Bermuda Easter lily.

In the beds along the side paths are dahlias, German iris, tiger lilies, crown imperial and Japan and annunciation lilies.

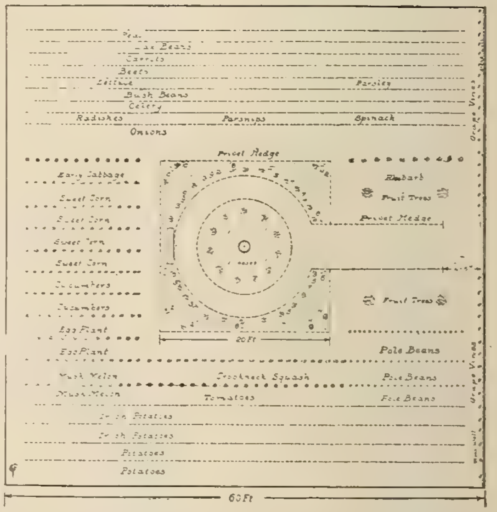
The varieties which may be used to make this arrangement effective are: The Bermuda Easter lily, thirty-six bulbs; crocus, mixed spring flowering, five dozen; dwarf cedars, sixteen small ones planted two feet apart; the annunciation lily, sixteen bulbs; Crown Imperial, twenty bulbs; *Lilium auratum*, or golden rayed lily of Japan, twelve bulbs; peonies, ten roots each of alba superba (cream white centre and rosy border), Queen Victoria (pink); poet's narcissus, four dozen bulbs; pansies, Morning Dawn (vermilion and yellow), Mauve Queen, and Psyche (rich violet); tiger lily, twelve bulbs; German iris, Mrs. H. Darwin, three dozen; cannas Chautauqua (scarlet) and Jupiter (vivid red); gladiolus America (soft pink), to be used near the white China asters, and Cardinal (red) to be used in the borders near the entrance; dahlias Jack Rose and Mrs. Roosevelt (pink) twenty roots of each; hardy perennial phlox Joan of Arc (white), and Belvidere (pink), twenty plants in all; scarlet sage (*Salvia splendens*) Scarlet Dragon; white China asters, Empress Comet.

Plan No. 4 is the simplest of the garden combinations. It is convenient as it gives direct access to the vegetable garden. Here flowers form the setting, and being planted about the vegetable area, they greet the eye on every side. Walk and flower border are of equal width as here given but may be changed to suit individual preference without marring the effect. This arrangement gives 1,764 sq. ft. of space for raising vegetables.

An effective planting scheme for the flower border consists of a combination of shrubs and flowers. At each corner the garden is a red cedar. Plantings of hollyhocks near the boundary with *Rhododendron maximum* in the foreground are features of the right and left borders as one proceeds from the entrance. At the corners are plantings of Japanese anemones. Near the margin of the beds in the nearer corners are tulips and in the farther corners, lily of the valley is used as a marginal planting. Two specimens of the *Spiræa Thunbergii* are planted about fifteen feet from each corner on the right hand side and two specimens of white lilac occupy corresponding positions on the left. Cosmos, roses, pinks, daisies, antirrhinum (snapdragon) and chrysanthemum are given room in the side borders. In the border section opposite the entrance are planted coreopsis, helianthus, heliopsis, and sweet William. Two specimens of dwarf vitea are planted in the border fifteen feet from each corner.

The necessary varieties are: *Rhododendron maximum*, eight plants; hollyhock (double deep rose and double white); tulip Queen of the Netherlands (rosy pink), four dozen; poppies double fringed (white and pink); cosmos Early White Giant and Lady Lenox (pink); May pinks (*Dianthus plumarius*); snapdragon Giant Scarlet; hardy chrysanthemum, Sunset (yellow), and Prince of Wales (white); lily-of-the-valley; white Japanese anemones; sweet William in variety; coreopsis El Dorado or Harvest Moon; *Spiræa Thunbergii;* white lilac; dwarf arborvitæ; Shasta daisy; Hybrid Perpetual roses, Magna Charta, Her Majesty, Baroness Rothschild and Black Prince.

Plan No. 5 allows about 3,500 sq. ft. of vegetable area. The flower garden comprises about 400 sq. ft. and is planted with roses. The path leading to the flower garden is bordered with a privet hedge which also surrounds the flower garden. The entrance is arched with privet, and privet arches just within give access to the vegetable garden.


Peas
Lima Beans
Carrots
Beets
Lettuce
Parsley
Bush Beans
Celery
Radishes
Parsnips
Spinach
Onions
Privet Hedge
Early Cabbage
Rhubarb
Fruit Trees
Sweet Corn
Sweet Corn
Privet Hedge
Sweet Corn
Sweet Corn
Cucumbers
Cucumbers
Fruit Trees
Egg Plant
Egg Plant
20 Ft
Pole Beans
Musk Melon
Crookneck Squash
Pole Beans
Musk Melon
Tomatoes
Pole Beans
Sweet Potatoes
Sweet Potatoes
Potatoes
Potatoes
60 Ft

References (all roses): 1, Baby Rambler; 2, Gloire Lyonnaise; 3, Yellow Maman Cochet; 4, Golden Gate; 5, Marie Guillot; 6, Dorothy Perkins; 7, La France; 8, Hermosa; 9, The Bride; 10, Gruss an Teplitz; 11, Killarney.

5.—Vegetables dominant, but with ample rose bed

The area embraced by the circular path in the inner garden is ornamented by a dial or bird font and planted with roses of the Baby Rambler type. Ten bushes are required for this. In the surrounding beds are two plants each of Gloire Lyonnaise, Golden Gate, Yellow Maman Cochet, Marie Guillot, Hermosa, The Bride, Gruss an Teplitz and Killarney; four of La France and two of Dorothy Perkins over the entrance. For preferred vegetable varieties the reader is referred to earlier issues of The Garden Magazine.

# The Strawberry Bed to Plant this Spring—By W. H. Jenkins, New York

IF YOU do not have a large supply of home grown strawberries for five or six weeks every year you are not living up to your opportunities. And besides having all you can eat in their season, you can eat them canned all the rest of the year!

I want to present a vision of strawberry culture with but very little knee and back-bending work, or finger weeding, but mostly good healthful exercise, in which you can stand up straight, push a wheel-hoe, or set plants, and get enthusiasm so you really enjoy the work. Begin now — not to-morrow, but to-day — to look for the best place for them in your garden, and for plants for the bed. For more than thirty years I have not failed to grow every year a large supply of good strawberries, and give my testimony that it is not strenuous or disagreeable work.

If you have a plot of nice mellow, well-drained soil, so much the better, but don't be deterred from planting, if the soil is somewhat heavy or stony. The main thing is to start, now. Probably there is some portion of your place where you grew a cultivated crop last year, where the water does not stand after a rain, that was kept clean of weeds, and it is in good tilth.

If the soil is not sufficiently rich to grow a large crop of corn or vegetables, apply, preferably, animal fertilizers that do not contain weed seeds. If you have hen manure and wood ashes put on each, separately, without first mixing. Barnyard manure if used should not be coarse or contain much straw, and it would be better if partly rotted. A high grade commercial fertilizer would be my last choice, and I would want to use it in some rotation that I could plow under cover crops to supply the humus needed.

Planting is best done by two people. Remember to make the plant really firm in the ground

After getting on the fertilizer, plow or trench the ground, no deeper than it has been in past years, but very fine, cutting narrow furrows, and plow when the surface soil crumbles in the hand, and early in April if possible. I am assuming the preparation of the soil for planting is done by horsepower, but the principle is the same if done on a little plot with spade fork and garden rake. Thorough pulverization of the soil, before setting plants, will make it possible to do the best work with the horse and hand-wheel garden cultivators.

After plowing, when the soil is well dried out, I harrow the ground. The last harrowing is done with the Acme, or a similar implement which pulverizes all the lumps and leaves the surface level. I finish with the plank drag or roller that firms the soil for setting the plants.

Now you are ready for setting the strawberry plants, which should have been ordered from the nursery, if nursery plants are used, so as to arrive when your ground is ready for them. The only right time to transplant strawberry plants, in the climate of Eastern New York, is in the spring when the leaves of the plants are an inch or two high, and there is considerable moisture in the soil.

The question of variety is largely a local one. If some one near you has a variety that you know is desirable, you are safe in planting it. In southeastern New York I have tried many kinds, and among the few I have retained are Brandywine, Wm. Belt, Gandy, and Marshall. Mitchell will give you a few small berries three or four days earlier than those mentioned, and Gandy bears a moderate crop of large sweet berries a little later than the others, i. e., there are large berries yet on the Gandy plants when other varieties run small. Brandywine is a good all-round berry for general culture, and the Marshall and Wm. Belt are best grown by the hill system in rich soils. A rather heavy clay loam seems well adapted to the Marshall. If more varieties are wanted I suggest President, and the old Bubach for the home garden.

All I have named are bisexual or staminate, and it is not necessary to plant pistillate varieties to pollenize them, but it is a question if even these are not better fertilized when two or more kinds are planted near together, and I advise doing so. Varieties of the pistillate class, like the Bubach, etc., will not set perfect berries unless adjacent to bisexual or staminate varieties.

If you like to experiment with new varieties, try out the new fall bearing varieties. Ripe berries — real strawberries in late fall, are a sensation! And you can have them sure enough by planting the right kinds now.

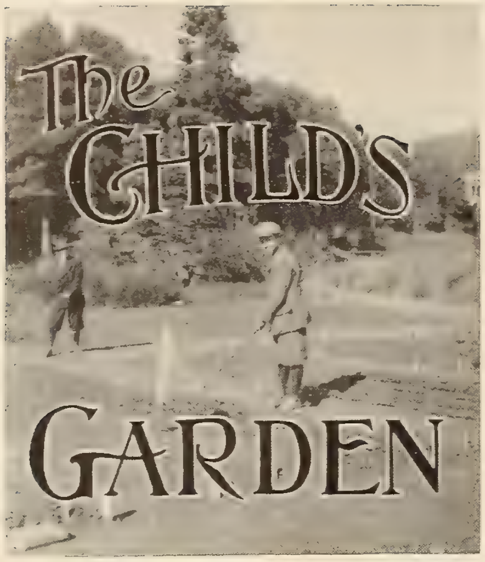
If you get nursery plants to set out puddle the roots when they arrive, heel them in a shallow trench, and shade them, until you are ready for planting. To set the plants rightly and easily you want a garden line, a marker, and a sharp spade. The marker can be quickly made by nailing a handle to a thick piece of board six or nine feet long, boring holes through and putting in some pegs to mark the rows. The marker is the most needed when plants are set in check rows. First decide which system of culture is best for you. I advise either the hill system or the narrow row, sometimes called the hedge row system. Probably the latter is best for most amateurs. The hill culture (cutting off all the runners), requires very close attention to the plants all summer, and thorough mulching of plants in winter.

For the hill system make the rows 2½ feet apart and the plants 2½ feet apart in check rows. For the hedge row plant 3 feet apart, and lining the plants the other way as above.

When ready for setting plants take up a few and shake the most of the soil off the roots. Press the spade down in the soil, and have a boy or some one to help you who will insert the plant in the opening with the roots spread out fan-shaped, and the bottom of the stem just even with the surface of the ground. Withdraw the spade and let the soil fall around the plant. When you have set a row in this way walk back over the row and press the soil with the feet so tightly around the plants that you cannot pull them up without breaking off the leaves.

Almost as soon as you are through setting the plants, begin to cultivate, and the deeper the cultivation, early in the summer, the better.

The hedge row system of planting will be the most satisfactory for the home gardener



## The Sweet Pea Contest

SOME of the boy and girl readers of THE GARDEN MAGAZINE may not know that there is a society called the National Sweet Pea Society of America. It is to encourage the culture of sweet peas. Prizes are offered for grown ups and for children, too. THE GARDEN MAGAZINE offers a prize in this contest to the boy or girl making "the best display by an individual child in any class" Our prize is called THE GARDEN MAGAZINE Achievement Medal. It is a beautiful silver medal, the sort you will always be proud to have won. This sweet pea contest will be held in Horticultural Hall, Boston, Mass., July 13th and 14th. Send for the full schedule.

It is not too late to start sweet peas when you receive this magazine. President William Sim of The National Sweet Pea Society of America sends this word to the boys and girls:

"Sweet peas do best where they have a long cool period to grow before the flowering season. To give them this advantage the most important part of their culture is to get the seeds into the ground in the spring, at the earliest possible moment. This should be done immediately after the frost is sufficiently out of the ground to work the soil. The soil should be deep and rich. If a row of sweet peas is to be planted dig or fork over the ground as deep as possible, forking in a good quantity of well decayed manure. If this cannot be procured buy some pulverized manure at a seed store.

"Roots of sweet peas may go down as far as the vines go up, so that it is essential to dig deep. The ground should be dug over two or three times before the seed is sown so that the manure will not be left in layers.

"The seed should be sown in a drill four inches deep, running lengthwise of the ground. It is better to grow vines three inches apart of the choicest varieties, than to buy the cheap seed and sow it so thickly that the plants smother each other when they grow up. More failures are caused by too thick sowing than from any other cause. Have some way of supporting the vines for they must be kept straight while growing. Birch boughs six feet long are the best, but if they cannot be procured use straight stakes driven in the centre of the row every three feet, with string run each side of the row, and tied to the stakes. Strings should be put on as the vines grow.

"If the above directions are carried out there will be no insects to contend with unless a spell of hot, dry weather comes, which might check the plants' growth. In dry weather water twice a week, applying water enough to reach the lowest down roots.

"Pick the flowers as they mature, unless seed is wanted. The plants cease growing when forming seed. Stir the ground on top once or twice a week, whether there are weeds or not. If you like flowers of all shades sow a mixture of varieties; but the best way is to buy separate colors, in the choicest varieties. A ten cent packet of a kind will give all the flowers needed of one color."

For varieties of sweet peas see page 40 of the February GARDEN MAGAZINE.

## Garden Work for April

LAST month you paid special attention to looking through the entire magazine and reading certain articles. This month do the same thing, as all the practical articles are just what you, too, want at this time.

You are beginning to be impatient now and wish to plant outdoors. But do not begin to plant in the open until the ground is in the right condition. This means that the soil must be nice and mellow and light. If it is heavy and wet wait until the sunshine dries it out. Go out into your garden and take some of the soil into your hand. If you can mold out of this a compact, damp ball, the soil is not ready to plant in. But when the soil is mellow sow out of doors, beets, kohlrabi, radish, onions, lettuce and turnips. This planting will probably come between March 15th and April 1st.

Do not think that you can plant your flower seeds so early. Leave these, except the sweet pea seeds, until the middle of April. Here is an experiment worth trying. Sow some flower seeds as early as you can in a nice sunny spot in the garden. Choose the warmest place you have. Later plant the same kind of seeds in a more shaded spot. You will get a succession of bloom in this way. See how much earlier the plants in the sunny spot blossom than those in the shaded corner.

Plan also for a wild flower succession of bloom. Did you know that arbutus, skunk cabbage and hepatica are March bloomers? Keep this in mind for your wild flower garden. Anemone, bloodroot, saxifrage, jack-in-the-pulpit and marsh marigold are April bloomers.

Just after spring recess seems to be the time when teachers and scholars begin to get actively busy at work on the school grounds. The school garden area should be either ploughed or spaded. Fertilize it well if the soil is poor. Two inches of rotted manure spread over the surface of the ground is not too much. Before planting sprinkle on some commercial fertilizer, and rake it in.

Have a path all around the garden, also around individual plots. If possible the garden should have a southern exposure with the rows running north and south. It is easier for children to sow small seeds in straight drills than in any other way. Make the drills about a foot apart; then the children can walk and cultivate between the drills. Small seeds may be sown right from the package. Children usually plant seeds too thick and too near the surface of the soil. The preparation of the garden plot and the making of drills is as much a part of the garden lesson as the mere act of sowing seed.

Consider as you work out the flower garden color, the time of bloom and duration of bloom. Add these facts to your garden diaries. Note what effect the season has on both. One may often make a second sowing of annuals and so keep the garden constantly blossoming.

A garden bench or a garden seat, a summer house and tool house covered with vines, add to beauty and fill a need in the garden.

The table shown below may be of use as all these plants are easy to grow from seed and can be planted as soon as the ground is warm:

Some of the best annual vines are morning glory, Japanese hop, gourd, cypress vine, nasturtium, moonflower, and canary-bird vine. Use these for screens to ugly spots.

See page 182 for a list of the prize winners in the 1911 children's garden contest.

| NAME | COLOR | HEIGHT (inches) | DURATION OF BLOOM (weeks) | USE |
|---|---|---|---|---|
| African marigold | Yellow | 24 | Twelve | Mass effect: cut flowers |
| Ageratum | Blue | 10 | All summer | Cut flowers and borders |
| Alyssum | White | 6 | Twenty | Edgings and mass effects |
| California poppy | Yellow | 12 | Four | Edgings; cover for rough ground |
| Candytuft | White | 6 | Four | Edgings; cover for rough ground |
| Cornflower | Blue | 24 | Until frost | Cut flowers |
| Dwarf lobelia | Blue | 6 | All summer | Cut flowers |
| Mignonette | Greenish | 12 | All summer | Mass effect; cut flowers |
| Mammoth verbena | Pink | 12 | Ten | Cut flowers |
| Mammoth zinnia | Red | 20 | Fifteen | Mass effect |
| Stella sunflower | Yellow | 36 | Ten | Cut flowers |
| Ten weeks stock | White | 15 | Ten | Cut flowers |
| Dwarf nasturtium | Yellow; red | 12 | Twelve | Cut flowers |

## What Washington School Children are Doing for the Capital City in Gardening

THE Treasurer of the School Garden Association asked me to write on "What Washington is Doing for School Gardens," but the children are doing so much more for Washington than Washington is officially doing for school gardens that I feel justified in changing the title.

School yards are extremely small in this city and until, through civic pride, the children began to improve them, they were most unsightly. Congress appropriates the money for school buildings. This appropriation has always been so meagre that after the interiors of buildings were finished there has been little left for the outside surroundings. Under the direction of their teachers, the children have done practically all school ground improvement that has been done. They have hauled manure and good soil; built a fence of broomsticks when a more up-to-date one was out of the question; bought all the bulbs and seeds and most of the shrubbery, and in many places cared for the yards in summer time. The school yards are not all beautiful but they are strictly the work of children. A simple plan is followed: — that of a narrow border around the playground, reducing the play space but little and making the playground pleasing. Every class in a building has a portion of this border assigned it, so if the teacher carries out the instructions given her, every child puts a bulb into the grade garden in the fall and seeds in the spring, which the children pay for. Therefore the children of the public schools are property owners. The city authorities furnish a load or two of soil to each building annually, but this is a small amount when compared with what the children have hauled, hence my reason for changing the title of this article.

Bulbs and seeds are bought for home planting at moderate rates from a local seedsman. His sales this fall have been phenomenally large, so there are thousands of home gardens planted every year by the children. Summer heat is intense at the capital, consequently the number of gardens that are brought to completion is much smaller than the number planted. Then, too, there is quite an exodus from the city to escape the heat, so the gardens suffer from neglect but approximately 60 per cent. of the gardens planted grow until the frost cuts them down.

Washington is a city of enclosed back yards — yards enclosed with hideous board fences six feet or more in height. Lima beans have been extremely popular with the home gardeners as a fence cover, serving the double purpose of hiding an unsightly object and affording financial returns. From one back yard fence, a family of eight had fresh lima beans throughout the summer. The planting of vines is one of the doctrines preached in the public schools. Arbor Day is sometimes changed to Vine Day for trees grow everywhere on Washington's streets but vines do not.

There are four community gardens in the city where elementary agriculture is taught. These are for the most part cultivated by sixth grade boys while the girls of that grade are at sewing school. In the spring and summer of 1911 two hundred and fifty boys received such instructions, each boy owning his plot for the time being and controlling all the products that he raised. Only one of these gardens, however, is on land owned by the schools. The others are on land that may be used for building improvements at any time. The location of one garden was changed every year for four successive years. The greatest loss of land suffered by Washington gardens was that on the grounds of the Department of Agriculture. Upon the recommendation of Dr. B. T. Galloway, chief of the Bureau of Plant Industry, the Secretary of Agriculture, James Wilson, five years ago, ordered three acres of lawn to be plowed and put into condition for children to cultivate. For three years about three hundred and fifty children had gardens on the grounds attached to the office buildings, but the construction of new buildings and greenhouses made it necessary to withdraw this privilege. Through Dr. Galloway's efforts, the student teachers in the Washington Normal School are instructed in plant culture in one of the Department's greenhouses and are thus enabled to supply schoolrooms with potted plants and window boxes throughout the winter.

The children at the capital have conquered much that was unsightly but there are worlds of the same kind still to conquer. I feel safe in saying to school gardeners all over the country that Washington, with great rapidity, is becoming the most beautiful city in the world for the public school children are assisting The Congress of the United States in making it so.

Washington, D. C. Susan B. Sipe, *Supervisor of Gardens.*

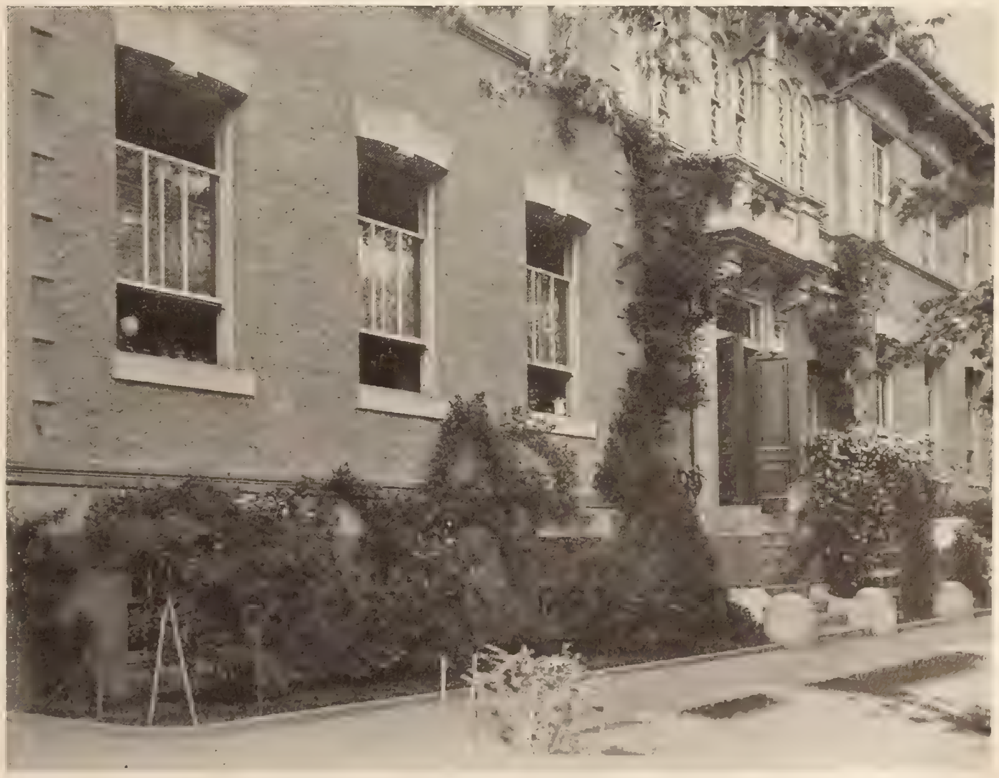
## A Boy's Second-Year Garden

I HAVE a much larger garden this year than the one I had last year. It is 45 x 55 ft. and an extra space of 20 x 30 ft. From this ground I cleared off burdocks and planted soy beans for my cow. I had a good crop of beans. The ground is rich, and the vines were well loaded with beans.

I had about eight quarts of peanuts, I should think. My beets also turned out well. I have nearly two and one half bushels. Many of them were very large being eighteen inches in circumference. I had a fair crop of broom corn: but it was attacked by some insect that was new to me. It never appeared on anything that I had grown before. The bugs were light colored and ate the leaves and killed some of my plants. I put in three rows of beans each fifty-two feet long, but they did not fill out very well, on account of the dry weather. I kept the ground well worked and the garden stood the dry weather pretty well.

I set out sixty strawberry plants and hope to tell you more about them next year. I had plenty of radishes and lettuce by sowing at different times.

Ardonia, N. Y. Ferris Malcolm.



An effective sort of school gardening used in Washington, D. C. Ground space being limited, the narrow border with shrub and vine planting solves the garden problem

Readers' Experience Club

(EDITOR'S NOTE.—*We want to know how successful workers do things in order to put actual experiences before our thousands of readers in all parts of the country. Every reader is invited to contribute a short note on some interesting experience. Just state the facts about some ingenious idea that you have actually worked out yourself or have seen.*)

### Lemon verbena

The lemon verbena (*Aloysia citriodora*) is not only one of the most fragrant plants of the garden when in its growing state, but the leaves and stems when dried preserve their odor for years. Indeed, no other leaves I have ever tried make such permanently fragrant sachet bags. All through the summer we pick the yellowing leaves and save them for the purpose, and in the winter the plant, which is not hardy, is pruned before being committed to winter quarters in a frost-proof cellar and all leaves and twigs dried. When the lemon verbena is grown indoors in the window garden, it seems usually to be of a deciduous habit and reduces itself to leafless stems.— A. H. B., Pennsylvania.

### Centrosema or butterfly pea

For several years I have been experimenting to find the right vine to cover one of those 5-foot solid board fences which enclose and disfigure a city yard. My latest acquisition is one that is little known; in fact, I had never seen Centrosema till I planted the tiny beans in my own garden. It is a perennial, but the seeds germinate with the gratifying readiness of an annual. If sown very early it may bloom the first year. Mine did not begin to bloom until the middle of August; the flowers are large, an inverted pea-flower, held well out from the foliage. There are said to be at least three shades — reddish violet, white, and the lavender which I possess. The vine is a slender grower so that the plants may be set quite close together. Do not sow it where a bushy growth is required, but for a delicate tracery on a board or wall and a background to a flower-bed it certainly is very pleasing. Mixed with mine is the white-flowered cypress vine, whose exquisite filmy foliage helps out any deficency of the Centrosema.— N. S. T., Pensylvania.

### The hollyhock disease

Answering the inquiry of M. H., Penna., in the January, 1912 number of THE GARDEN MAGAZINE, as to how to save hollyhocks from the deadly disease of that plant, use the following mixture. Put 3 oz. copper carbonate in one quart of ammonia, agitate till dissolved, spray with ordinary bucket sprinkler, diluting in proportion of one quart of mixture to thirty-five gallons of water. It will keep indefinitely. I raise hundreds of plants every year from seed planted as soon as ripe, shading from the August and September suns with double black mosquito netting, and get good plants the same fall. I use the same fungicide on roses and grape vines.— J. E. T., Indiana.

### The summer hyacinth

The summer hyacinth (*Galtonia candicans*) is so little known and grown in America, although a favorite in England, that I venture to call its merits to the attention of your readers. It is hardy in our climate provided that in the autumn the old flower stalk is removed and the hole left in the top of the bulb corked up. The flowers consist of tall, graceful racemes of white, drooping bells, which harmonize perfectly with delphiniums and gladiolus. The summer hyacinth makes an abundance of seeds, and I am now growing a colony of small bulbs from them; but, like all things in the garden, they require patience and time, as they take three years to bloom from seed. The bulbs may be had, ready to bloom luxuriantly, for about eight cents each. — H. W. F., Connecticut.

### Earth worms and onions

Every spring I have trouble with earth worms which pull out my onion sets. I plant the sets just below the surface; and for two or three days after a rain, if the sets have not taken root, large earth worms (night crawlers, the fishermen call them) may be seen with one end of their bodies against the sets pulling them along over the ground and into their holes. They do not get the larger ones under ground, but I have to go over my onion sets several times to reset. I have often seen hundreds of the large worms stretched out over the ground pulling onion sets. I did not believe at first that the mischief was done by worms, but have seen them so many times since that I have now no doubt about it. Can anyone suggest a remedy? — A. C. B., Illinois.

### Poppies for cut flowers

My poppy bed last summer was most satisfactory. The bed had been prepared and seed sown the previous autumn, but it did not germinate. (I have tried autumn sowing several times with the same result.) A second sowing was made on June 5th, the seed being mixed with sand to prevent crowding. In spite of this precaution the young plants were very close together, but I did not thin them. They commenced to bloom the first week in August. The seed sown was the Improved Shirley. The colors were wonderfully beautiful, ranging from delicate shades of rose and salmon pink to brilliant scarlet and vermilion. The blossoms were very large and many of them were fluted. Late each afternoon I cut all the blossoms and in the morning the bed was again a mass of bloom. This continued till the first week in October, when the weather became suddenly cold, arresting the development of the remaining buds. On October 7th, I cut a quantity of the largest buds, plunged the stems in boiling water, and wrapped them in paraffine paper. It was thirty-six hours later that they were placed in cold water, and every bud, but one, opened.—R. V. S., Maine.

### Egg shells for seed planting

Egg shells make excellent miniature flower pots in which to plant seeds of tender plants. Open the eggs at one end instead of in the middle and trim the edges as smoothly as you can; fill with potting soil well mixed with sand, and place in shallow boxes of earth. Then place one or two seeds in each shell. When the shell is filled with roots, lift it and crush the bottom of the shell or cut an opening with a sharp knife and place it in the pot or bed in which you wish it to remain. The roots will grow through the openings in the bottom and the plant will never know it has been moved.— C. L. S., Virginia.

### Attaching vines to walls

Surgeon's adhesive plaster is useful to attach vines such as ampelopsis to foundation walls, but has any one called attention to the use of court plaster in training vines indoors? It is not as strong as the adhesive but coming in different colors it can be chosen to harmonize with paper or woodwork. Young stems of English ivy or Madeira vine can be held neatly in place about mantels or window casings with its assistance. It is much less conspicuous than merely twining vines on string.— P. P., New Jersey.

### A lure for rose bugs

Last June, in looking over a patch of 1,500 American Pillar roses, I noticed that they were entirely clear of June bugs (or rose chafers) although there were thousands of blossoms for them to feed on. This was a surprise, as nearby beds of climbing roses were badly troubled. I then discovered that cannas planted near the American Pillar roses were covered with the rose bugs. The idea came to me that perhaps as long as the June bug has a canna flower to feed on it will not trouble the roses. They adhered to the canna flowers as if they were glued there. If, by planting a few cannas near your rose beds you can, by the loss of the otherwise worthless first blossoms of the cannas, save your beautiful June roses, would you not think it worth while? The June flowers of the cannas seldom amount to anything, and after July 8th or 10th the season for June bugs is over for the year. Then the cannas bloom again, and from July to frost you will have exquisite blossoms. This, of course, is not a cure for the June bugs, but simply a lure; the canna blossoms seem to stupify the insects so that they can easily be picked.

A. W., Pennsylvania.

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## Awards in the Children's Garden Contest

OCTOBER, 1911, saw the close of our third garden contest for children. We hold this contest annually to encourage children to garden and to garden intelligently. Each year a better quality of work is submitted, one of the rules of the contest being that children and schools must send to us written records of the gardens, as well as pictures. The pictures might be far better. When a photograph is used for magazine purposes it must be very good for in reproduction it loses much of its detail and many of the snap shots sent in are of no use.

Helpful gardening books and Garden Magazine subscriptions are offered as prizes. There are three groups or classes in the contest. Class I. is for individuals; first, second, and third prizes are given in each section of this class. The first prize is three books — "The Flower Garden," "The Vegetable Garden," and "House Plants and How to Grow Them" — taken from the Garden Library. The second prize is "The Flower Garden" and "The Vegetable Garden." The third is a year's subscription to The Garden Magazine.

Classes II. and III. are for schools, and but one prize is given in each. Class II. has for a prize The Nature Library. To be sure this is not on the subject of gardening but includes nature subjects in general. If two schools in this class are tied, each school receives The Garden Library. This library is also the prize offered in Class III.

The prize winners in the contest just over are as follows:

### CLASS I

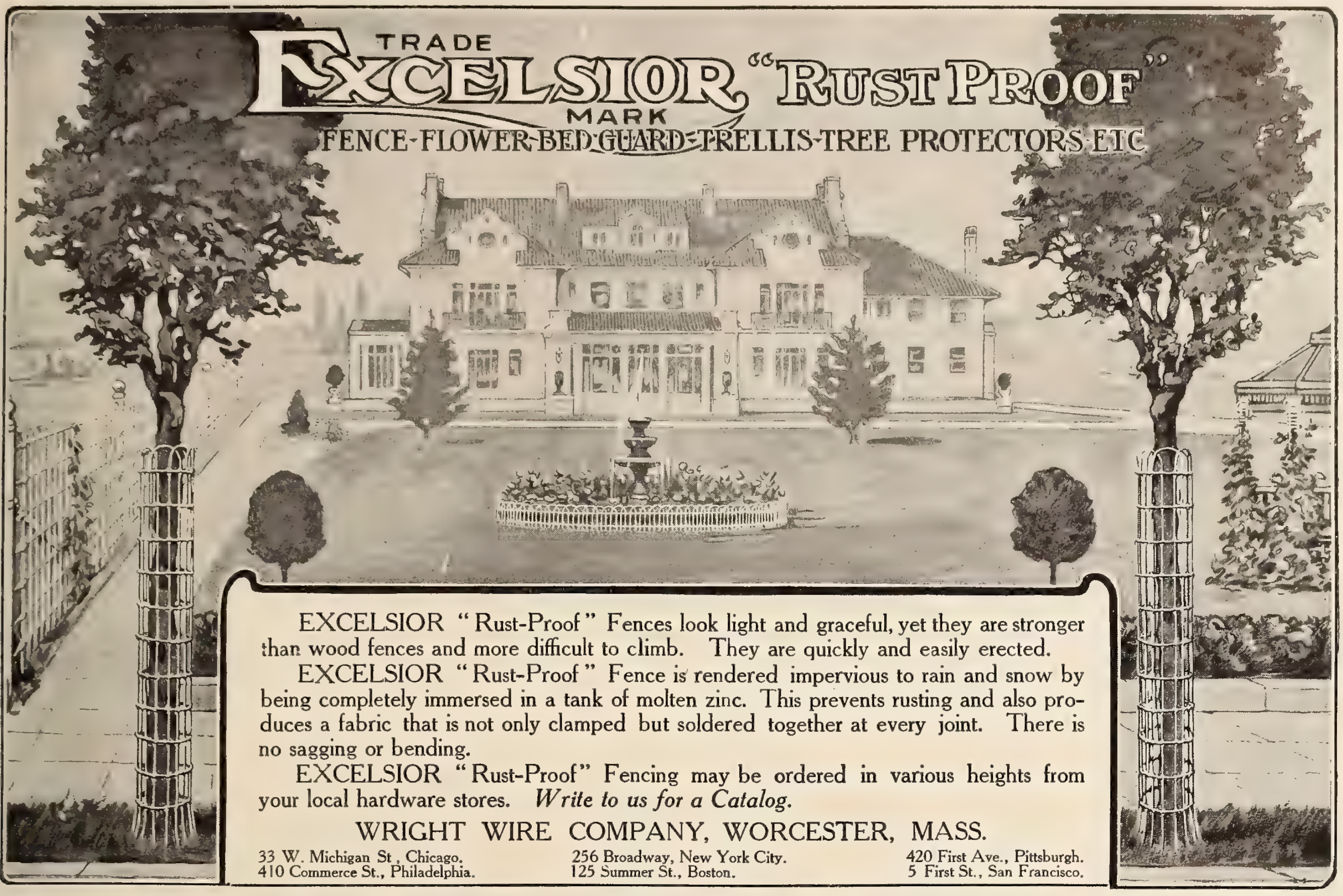
A. The best flowers raised in a home garden:
  1. Mabel Jane Musser, Cleveland, Ohio.
  2. Irene Lincoln, Marlborough, Mass.
  3. No award.
B. The best vegetables raised in a home garden:
  1. Howard O'Connell, Providence, R. I.
  2. Ferris Malcolm, Highland, N. Y.
  3. Richard Barclay, Highland, N. Y.
C. The best flowers in a school garden:
  1. Margaret Scheid, Lancaster, Pa.
  2. Mary Cerreto, New Rochelle, N. Y.
  3. No award.
D. The best vegetables raised in a school garden:
  1. Abram Kuhms, Lancaster, Pa.
  2. Karl Vandroff, New Rochelle, N. Y.
  3. Mabel Morris, Jersey City, N. J.
E. The greatest variety of vegetables:
  1. No award.
  2. Robert Plues, Detroit, Mich.
  3. Byron Paltridge, Highland, N. Y.
F. The greatest variety of flowers:
  1. Roger Newton Perry, Worcester, Mass.
  2. Jacob Block and Irene Riley, New Rochelle, N. Y.
  3. Sadie A. Barron, Somerset, Pa.
G. The finest specimens of corn:
  1. No award.
  2. E. Winslow Stratton, Marlborough, Mass.
  3. No award.

### CLASS II

A. The finest looking garden of three years' or more cultivation:
  No award.
B. The finest looking garden of less than three years' cultivation:
  Sterling Street Garden, Boston, Mass.
C. The greatest improvement of school grounds or unsightly spots directly under the care of contestants:
  1. Under city conditions:
    a. St. Mary's Park School Garden, New York City.
    b. The Riverside Garden, Brooklyn, N. Y.
  2. Under country conditions:
    Ardonia School, Highland, N. Y.

### CLASS III

A. The best display of garden products:
  Roger Williams' Park Garden, Providence, R. I.
B. The greatest variety of annuals:
  Marlborough School and Home Association, Marlborough, Mass.



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I have shown thousands of men and women how to grow mushrooms successfully. Most all of them are now in the business growing for profit and making a good income without interfering with their regular occupation with this wonderful, easy, pleasant pastime. I hope soon that a mushroom bed will be as common as vegetable gardens.

I have written a little book which gives truthful, reliable, experienced information about mushroom culture, where mushrooms can be grown, how to have a mushroom bed in your cellar, etc. It also tells about spawn and how to secure really reliable spawn. I shall gladly send you this book Free.

If you have never tried mushroom growing, or if you have tried and failed because of the causes of which I have spoken, write for my free book in which I will show you beyond the shadow of a doubt that you can have a fine mushroom bed. *Address*

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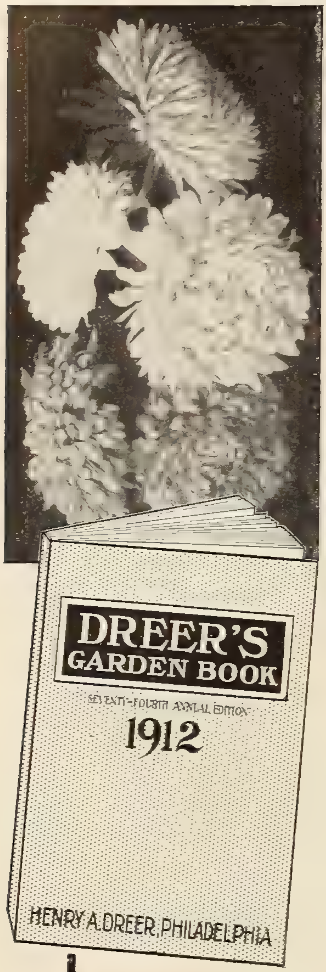

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The
FRUIT
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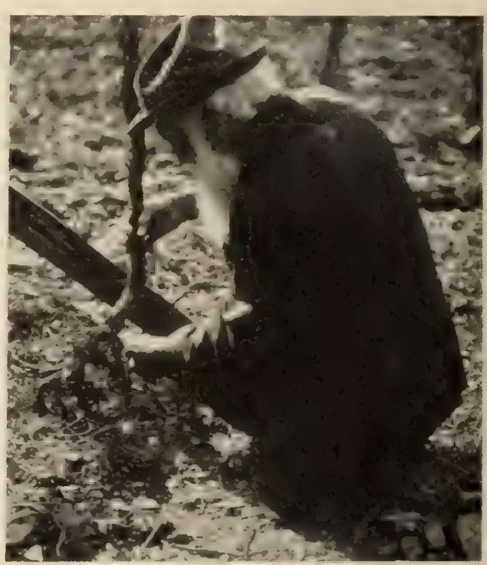
## Grape Vine Roots that "Grow Up"

FOR several reasons grape vines have a tendency to work up on top of the ground, thus exposing their roots to damage from the plow and hoe, to say nothing of the weakening effect on the vine itself. I have seen grape vines that literally climbed out of the earth altogether, the lower bud or ring of roots being six inches above the surface of the soil, only one of the smaller roots being fast to the ground.

The first thing to do to prevent this is to set the vine deeply when planting, putting the lower roots a foot under ground. This, of course, means a deal of hard work shoveling out the hole for the young vine, and lazy hired help cannot always be trusted to do this. The team and a big plow are used in setting large vineyards, thus reducing the hand work very much, though in old vineyards and home gardens the shovel and chisel-bar must do it all.

Last spring I set five hundred two-year old vines, digging the holes all by hand, making most of them over a foot deep and two feet square, by hard work digging five holes per hour. The vines were then put in, the ends of the roots trimmed slightly, then some good surface soil was packed about the roots. then two handfuls of 2-8-10 fertilizer, and the holes filled in with the yellow or bottom soil. A 4-foot stake was set with each vine on which to tie it the first two years. These vines grow well and the roots almost never get in the way of the plow.



Showing how a grape vine will work up out of the ground. Trim and bury the roots

Where a vine has worked up, something can be done by trimming the ends of such roots as are entirely on top of the ground and burying them again, pointed downward, swung around out of the way of the plow. A very choice vine that has lost roots can be strengthened by allowing some shoots or "suckers" to grow one season and the next spring, before the buds start, burying these suckers as deeply and as close up to the vine as possible,

**Simmons Hose Reels**

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I also carry a complete line of Nursery Stock, Asparagus Roots, California Privet, Strawberry Plants, etc.

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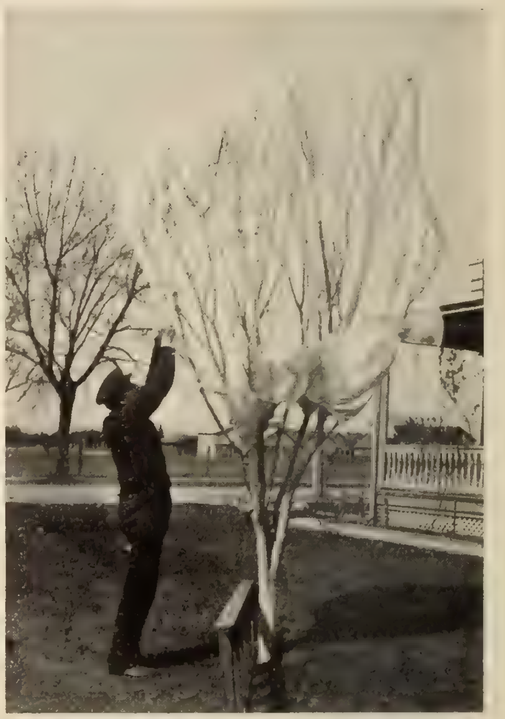
putting them also in the row — that is, out of reach of the plow. Then by training up a shoot from the roots and, after it is well established, cutting out the old vine, you will have a new vine where the old one stood without losing a year's crop. Roots at the surface of the ground make troublesome hand hoeing, and the best way to avoid it is to set the vine deep enough in the beginning.

Further, the best time to set out grapes is in the fall. Set as in the spring except that the vine above ground is not cut then in any way. Cut it back to four or five buds early in the spring.

New York. JULIAN BURROUGHS.

## "Netting" Fruit Trees

IN THE spring, just as soon as the blossoms appear on my plum tree, I completely cover the whole tree with netting which has been dipped in slacked lime. After I get the blossoms and all the branches covered I wrap the netting around the main part of the tree several times and sew or tie it fast. This not only protects the tree from possible snow or hail storms but also prevents stinging insects from injuring the fruit as it forms. The tree always yields abundantly where otherwise there might at times be a poor crop of fruit.



Place netting over small fruit trees to keep stinging insects from injuring fruits

After a hard rain or a wind storm I darn the netting where holes have been torn by the limbs. The netting also prevents the blossoms from being blown off before they should and being strewn about the lawn. If you have a small fruit tree on your lawn, try covering it with netting this spring just to see if the fruit won't be better and more plentiful.

New Jersey. GEORGE ROCAP.

## An Exact Method for Planting Fruit Trees

TO SET an orchard in regular rows, the rows running true in both directions, I use the following method: I buy two or three balls of very stout linen twine and to it, at regular intervals, I attach little brass rings, each ring representing the distance between a tree and its neighbor. Locating the ends of the first row of trees. I stretch the cord tightly between these points and press a little stick into the earth beside every ring. The first row has now been located. To lay out cross rows at right angles nail together in the form of a triangle straight strips of wood nine, twelve and fifteen feet in length. If the ends are exactly

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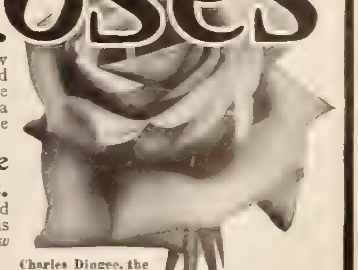

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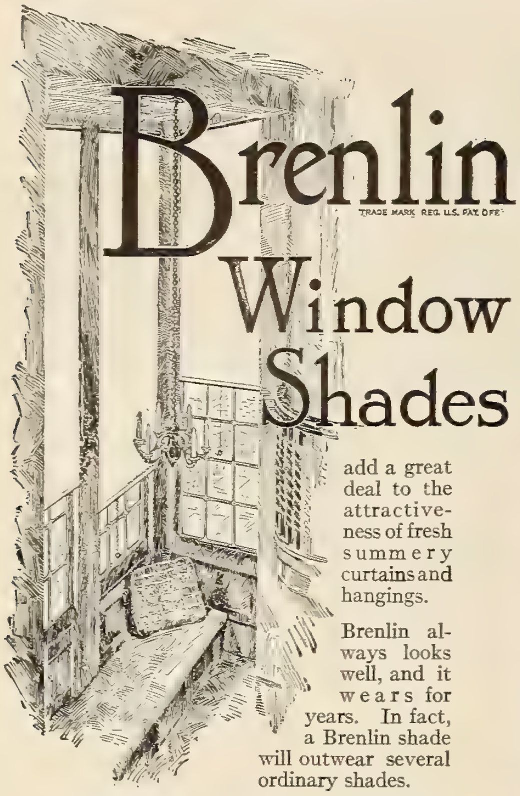

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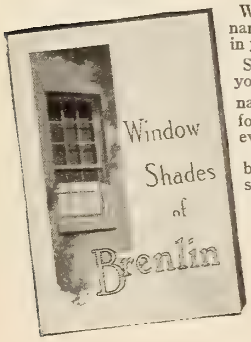
In it are actual samples of Brenlin in all colors, also in Brenlin Duplex, and many helpful suggestions for the treatment of your windows.



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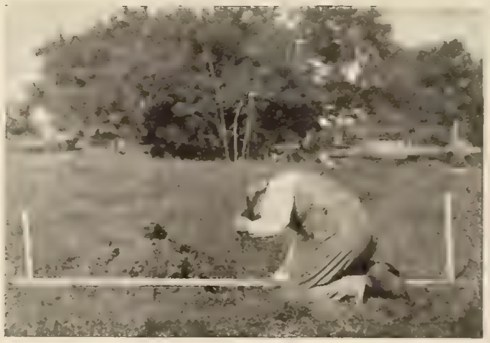
matched there will result an exact right-angle where the nine and twelve-foot strips meet. Lay one side of this frame along the line of the first row, and the other will point along the line of the first cross-row, which is staked out as before. The location of the other rows is simply a matter of measuring again with the cord and rings. Each little stick must be removed when digging a hole for the tree. To be sure that the tree occupies the exact location in the hole that was marked by the stick, take a light strip of board, ten or twelve feet long, and cut a V-shaped notch in one side at either end, and one *exactly* at the middle point between the other two cuts, and on the same side of the strip.

When ready to dig a hole, place the strip of board upon the ground with the stick resting in the middle notch. Place two other sticks so that they will rest in the two end notches of the long strip. The middle stick, where the tree is to stand, can now be removed and the hole dug "both deep and wide," throwing the surface soil in one pile and the subsoil in another. To set the tree in the exact position occupied by the first stake, lay down the notched strip of board so that the two sticks still in position will fit into the two end notches. Place the tree in the hole with its trunk resting in the middle notch. The tree is held firmly in place in the notch with one hand while with the other fine loam is carefully packed about the roots.



This method of planting fruit trees ensures an exact distance between all the trees

Massachusetts. W. D.

## The Fall Fruiting Strawberries

THE question of growing fruits out of season is, of course, a personal one. Do you want them? If you want strawberries in August, September and October, there is no question but that you can have them, as I know from my own experience. I personally much prefer to have fruits in their proper season, but to people who are particularly fond of strawberries, and could eat them *all* summer long, the fall-bearing varieties are certainly a boon.

For the past two years I have seen at the New York State Fair, in September, an excellent exhibit of strawberries by a New York grower. They were of good size and of fine flavor. Specimens of the foliage were also shown, which indicated healthy and vigorous plants.

The history of the fall strawberries, in brief, is as follows: An old variety, the Pan American, was observed to have the characteristic of blossoming and bearing a little fruit all summer, and so it was called the "everbearing" strawberry. Growers became interested in these fall-bearing strawberries from a commercial standpoint, and produced the following seedlings, which are more or less everbearing: Autumn, Productive, Superb, Frances and Americus. With the exception of the first two, all are bisexual and will bear if planted alone. The most popular now are Frances and Americus, the latter being the best adapted to ordinary culture, quite productive and of fine flavor. Frances is a little more productive, but it needs very high cultivation.

The usual plan is to set these strawberries in the spring the same as any other kind, and the pick off all the blossoms up to within three or four weeks of the time when berries are desired. A great point with these berries is that they bear the first year.

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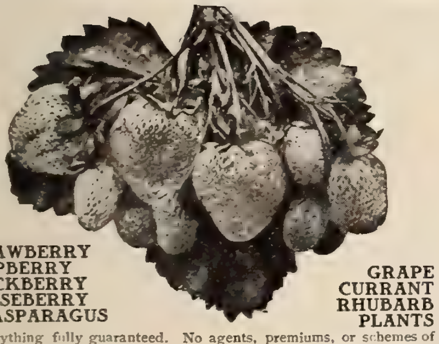

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A lawn roller whose weight can be adjusted to the conditions of your lawn, garden, tennis court or driveway.

**All in One**
A light Machine for the soft, wet spring lawn.
A heavy Machine for the hard, dry summer lawn.
A heavier Machine for the driveway or tennis court.

Why buy one of the old style iron or cement fixed-weight rollers that is generally too heavy or too light to do your lawn the most good, paying for two or three hundred pounds of useless metal—and freight on it as well—when less money will buy the better, more efficient

**"Anyweight" Water Ballast Lawn Roller**

A difference of 50 pounds may mean success or ruin to your lawn—a half-ton machine will spoil it in early spring, while a 200 lb. roller is absolutely useless later in the season. If you desire a fine, soft, springy turf of deep green, instead of a coarse, dead looking patch of grass, use an "Anyweight" Water Ballast Roller—built in 3 sizes, all of 24 inch diameter and of 24, 27 and 32 inch widths. Drums boiler riveted or acetylene welded. Weight 115-124 or 132 lbs. empty—from that "anyweight" up to half a ton when ballasted. Filled in 30 seconds—emptied in a jiffy. Runs easy—lasts a lifetime.

**This book sent Free:** We will mail you postpaid, our valuable and interesting book on "The Care of the Lawn" together with folder about the "anyweight." Write us today. Save money—save your lawn.

**Wilder Strong Implement Co., Box 6, Monroe, Mich.**

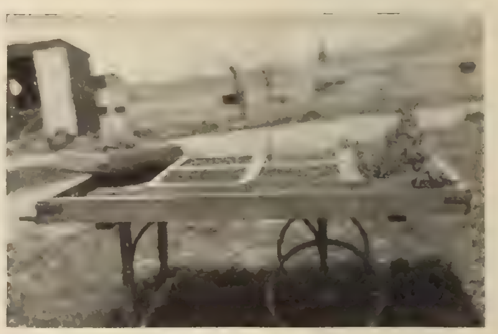
115 lbs. to ½ ton

# HOME-MADE CONTRIVANCES

## A Home-made Plant Table

STARTING flowers or vegetables in the house each spring is quite a problem. The earth-filled seed flats are heavy and dirty and, when several are put on an ordinary table, it requires time and labor to shift them properly for cleaning, watering, weeding, etc. A plant table, similar to the one shown in the accompanying illustration, overcomes all the ordinary difficulties encountered. It can be moved to any desirable window, changed about so that all the plants get an equal share of light and air, moved easily when necessary for cleaning, wheeled out on fine days and brought indoors again if frost threatens. When the time comes to plant in the open the individual flats can be taken out as needed, or the whole table can be wheeled into one's garden and moved about at will.

This table cost me less than two dollars to make. The lumber consisted of odds and ends of $\frac{7}{8}$-inch dressed pine. The wheels, bought from a baby carriage repair shop are 14 inches in diameter and have rubber tires to save the floors, and the braces were three pairs of japanned shelf brackets. The table, or tray, is 48 x 30 in., 2 inches deep, and is 18 inches above the floor. Each seed flat is 11$\frac{7}{8}$ x 14$\frac{3}{4}$ x 3 in. The table is lined with a heavy building paper (zinc would be better) and is stained to match the trim in the room where it is most frequently used. The reason for keeping the table so low is that one may work while seated, thereby saving backache and fatigue. The width of the table should be governed by the size of doors it may have to pass through.



A movable two-dollar plant table eliminates many of the troubles of raising plants indoors

New York. W. N. McV.

## A Pole Bean Trellis

AN EXPEDIENT I used this year as a trellis for pole beans proved very successful. I planned to raise two hundred hills of lima beans, but could get only one third that number of poles. Sometimes the method is followed of planting the beans in a circle round a stout pole, letting them run up strings to the summit, but I like to have everything in rows, as far as possible, so I can use my little wheel cultivator, which is a great labor-saver.

The plan occurred to me of setting the poles six feet or more apart in the row, and planting a hill at each pole and two between. On a rubbish heap was a lot of old wire that had come round bales of

**For Your Friend Who Loves a Garden**

Innumerable love gardens, old and new, live for those who love them in the pages of Lena May McCauley's delightful book,

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Illustrated with many exquisitely colored photographs of the fair gardens described, this book is also quite a guide to those who are bent upon the development of their own garden.

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*The Chicago Record Herald.*

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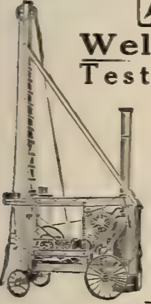

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It can be used as a single or double wheel implement at will and is easily adjusted. It can be adjusted so that it can be used by a child as well as an adult. As a double wheel hoe it's a straddle row weeder.

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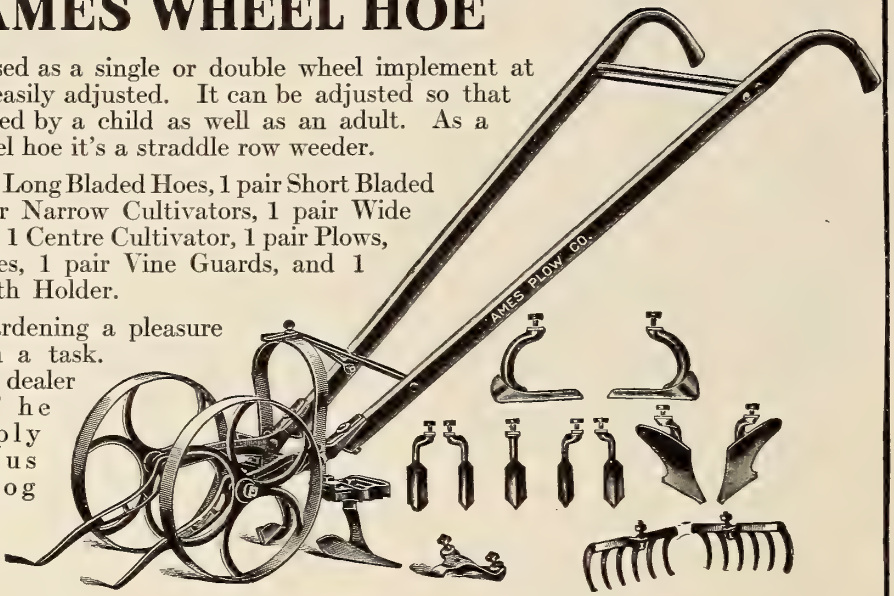
It makes gardening a pleasure rather than a task. Ask your dealer for it. If he can't supply you, write us for Catalog No. 1, giving us his name.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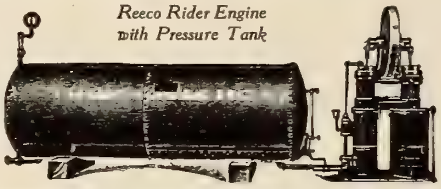
**New York. Boston, Philadelphia. Montreal, P. Q. Sydney, Australia**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brings quickest results. Its nitrogen is entirely and immediately available. It is easy to apply, clean and odorless—the right fertilizer for lawns.

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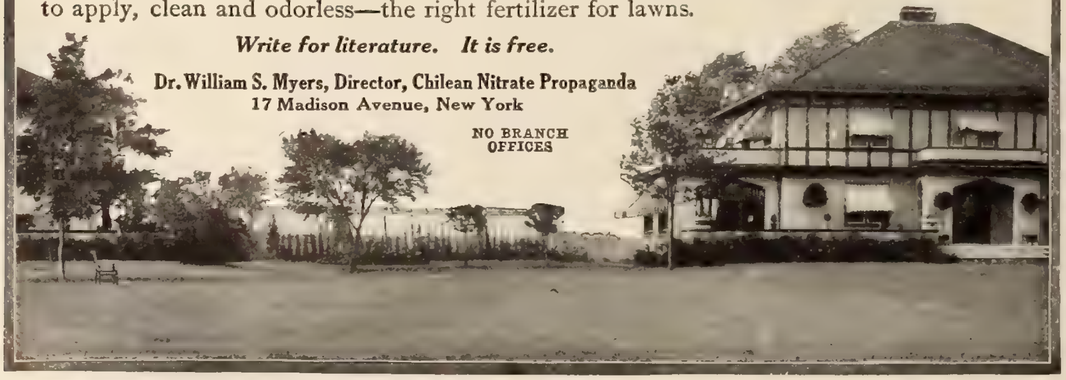

hay. This I disentangled, hooked together the ends, and make a strand from pole to pole twisting it around each one about a foot from the ground. A second strand I placed on the poles as high as I could reach. Probably any stout twine that would not shrink and stretch with the weather would do as well. I supported the last pole in each row with a stay of wire running down to a stake. At the hills between the poles I ran a piece of stout twine vertically from one strand to the other as a support for the climbing vines where there were no poles.

Five beans were planted to each hill, the plants being afterward thinned to two or three. With lima beans it pays to place each seed with the eye downward, as otherwise the large seed-leaves sometimes get tangled in trying to turn over, and will blight the young shoot. It seemed to me that the vines climbed the strings even better than the poles, and the whole made a handsome screen of green vines with thick clusters of pods. The poles need to be stout ones and well stayed, or the weight of the foliage and pods will bend over the trellis.

After the season is over, it is little work to untwist the wire strands, make a coil of them and put them under cover for next year.

Washington, D. C. J. M. LONG.

# SOUTHERN DEPARTMENT

## Bean Planting Time

CONTINUE to plant out cannas, dahlia roots and chrysanthemum plants as late as the first of June, but remember the earlier they are put into the ground the better the results will be. Press the soil firmly about these plants and roots to promote earlier growth and help retain moisture in the soil.

All kinds of beans may be planted now, including edible cow peas; also corn, melons, cucumbers, summer squash. This type of squash is very easy to grow and is very prolific, a few plants furnishing sufficient for a good sized family throughout the summer. Put the plants six feet apart and keep the fruit cut off when young.

Continue to plant seeds of annuals. Every one likes sweet peas, but if you have not sown any it is too late now to do it. However, its close rival, the nasturtium, can be planted at this time, and there are many other annuals equally as pretty as the sweet pea.

Do not neglect the common sunflower. Once started, it will choke or smother weeds, and its seed furnishes an excellent poultry food.

Continue to set out tomato, egg and pepper plants, and sow seed for main crop if you have not already done so.

Plant cotton very early in the Lower South; remember that it pays to use the improved seed, and make sure of getting this by securing it from a reliable source. There are two very distinct types of upland cotton — the big boll and the little boll — and some varieties of each type have four and five locks. The latter are preferable, as is the big boll type, so far as picking is concerned, for it is usually easier to pick. The little boll sorts, having small seed, usually turn out more lint cotton.

Set out sweet potato plants whenever the soil is well moistened. Remember that the sweet potato is a lover of humus as well as of potash.

It is not yet too late to plant roses. Be careful to thoroughly firm the soil around the roots.

Caladium bulbs should be planted at once. Give them plenty of rich manure and water.

Georgia. THOMAS J. STEED.

## How does your porch look to the passer-by

Has it got that cool, restful appearance secured by using Komi Green Painted Porch Curtains? They not only make a verandah neat and attractive from the outside, they also turn it into a pleasant outdoor living room.

**Komi Green Painted Porch Curtains**

are made in sizes to fit all verandahs. They keep the sun out, but let the cool breezes in. They give you perfect privacy, yet you can see all who pass. If your dealer cannot supply you, write to us for full information and the name of a dealer who can.

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Send for our Garden Frame Booklet. It is a thoroughly reliable guide to the most advanced methods of gardening with Frames. Three pages are devoted to the personal experiences of a Suburbanite with his 3 sash frame. It's told in a chatty, likeable way and accompanied by photos taken by himself.

***Send your letter direct to our main office at***

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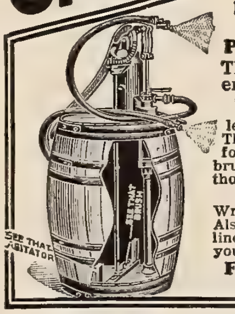

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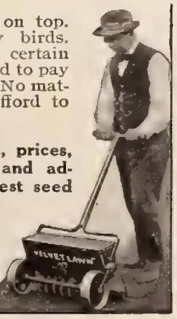

PUTS the seed in the ground—not on top. None blown away or eaten by birds. Makes a beautiful, uniform lawn certain in the shortest time. Saves enough seed to pay for itself. Run easily by one person. No matter how small your lawn you can afford to have this seeder.

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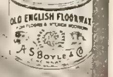

is the finish which brings out every bit of *beauty* your floors, woodwork or furniture possesses—often much more than you believe there is in them. Makes their care a lot easier because the finish will not hold dust nor show scratches and it *lasts.* Prove it.

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**Everblooming Fragrant Butterfly Bush**

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This 196-page book gives complete data on Distinctive Seeds and Plants, and on the Grass Seeds sown with renowned success on the finest lawns the country over, from the White House at Washington to the Exposition Grounds at Portland, Oregon.

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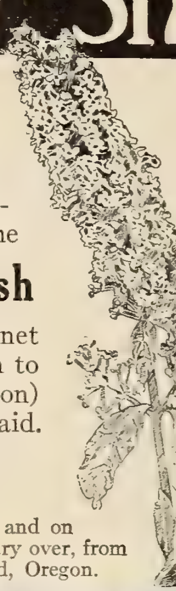

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It is **uniform; easy to mix; stays in suspension; acts quickly; sticks like paint to plants; does not clog the nozzles;** and **does not injure foliage or fruit.** Its **Higher Quality** and **Lower Cost** prevent the need of a substitute. **Paste** or **Powder** Form; small or large packages; shipped in **Hard Wood** or **Steel Containers.** Always demand **Key Brand Arsenate of Lead.** For a Fungicide use **Key Brand Bordeaux Mixture;** for an Insecticide and Fungicide, combined, use **Key Brand Bordo-Lead;** for Scale use **Key Brand Scale Killer.** Write today for circulars and prices. Agents and wholesale distributors wanted.

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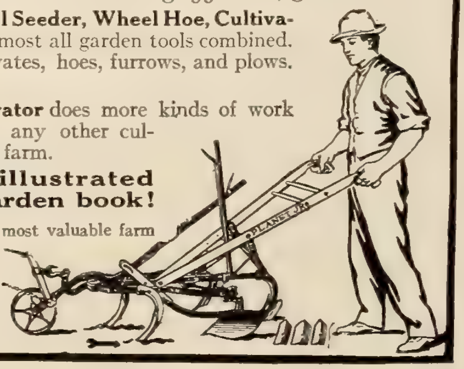


## Gladiolus in Georgia

Gladiolus are among the easiest flowers to grow; although they prefer a rich, loamy, clay soil, they will thrive in any good garden soil. Almost any color or combination of colors can be had. The bulbs are cheap, too. Some successful growers and specialists recommend planting from five to six inches deep, but I usually plant about four inches deep, and my experience has been that sometimes the bulbs will rot if planted any deeper, especially if the weather in the spring happens to be cold and wet; the right depth all depends on the soil — the lighter the deeper.

The best flowers usually come from the earliest-planted bulbs; therefore, it is important to get the bulbs into the soil early, but not until all danger of hard freezing is past. A light frost will not usually do any harm. Select a sunny place for the bed and make successive plantings every three or four weeks until the first of August, to keep up a succession of bloom. If the bulbs are planted in rows, the rows should be from eighteen inches to two feet apart and the bulbs from four to eight inches apart in the rows. Keep the rows free from weeds by frequent weeding, which is about all the cultivation necessary. Remember that it pays to fertilize them liberally with rich, well decayed manure mixed with the soil at least ten inches deep. The earlier you get the manure into the soil the better it will be, as it helps to conserve the winter rains. At the same time it thoroughly decays and becomes more available as plant food, thereby producing more rapid growth and earlier flowers. Here, in the South, it is not necessary to move the bulbs to a new place every year, but, if it ever should be, it must not be done until after the winter. In fact, if the soil is well drained, the bulbs keep better over winter if left right where they have been growing.

Gladiolus cannot be excelled as cut flowers. They last for over a week

New bulbs are formed on tops of the old ones, and therefore each year they work up nearer the surface of the soil. If you want them to grow in the same bed for more than one year, plant the bulbs deeper than four inches. To do this, mix the manure with the soil to a depth of twelve to fifteen inches, place the bulbs in the bottom of trenches, that were made six to eight inches deep, and cover with four inches of soil. After the seedlings have grown above the level of the soil fill in the trenches.

In my own garden I have found America one of the best varieties for general purposes. The flowers are very large and of a beautiful lavender pink. Other excellent varieties are Sulphur King, a clear yellow; White Lady, white; Augusta, white with a little blue; Columbia, orange scarlet; Philadelphia, dark pink with white on the ends of the petals; Attraction, dark crimson with white throat; Cardinal, cardinal scarlet.

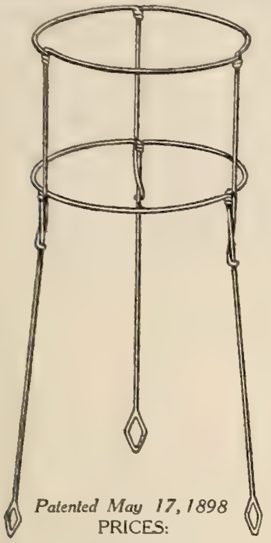
When flowers are wanted for indoor decoration, cut the spikes just as soon as the first two or three buds have opened and place them in water in a cool dark place. I have kept flowers in good condition in water for over a week.

Georgia. Thomas J. Steed.

## The Model Plant Support

**For Tomatoes, Peonies, Dahlias, Golden Glow, Chrysanthemums, etc.**

*REPAYS THE COST MANY TIMES OVER IN A SINGLE SEASON*



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A Lighter Support is also made for Carnations
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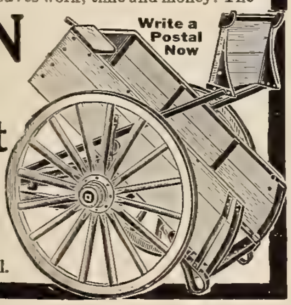

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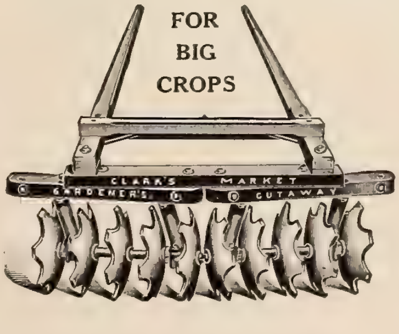
FOR BIG CROPS



This harrow is used extensively by gardeners and truckers in the South and other vegetable growing sections. In Florida it is a great favorite for orchard cultivation.

Made light for shallow cultivation; cuts two to four inches deep if desired. No seat supplied unless ordered.

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No gardening equipment is complete without one or more of these harrows. Used on their experimental grounds at Garden City, L. I., N. Y., by the publishers of The Garden Magazine.

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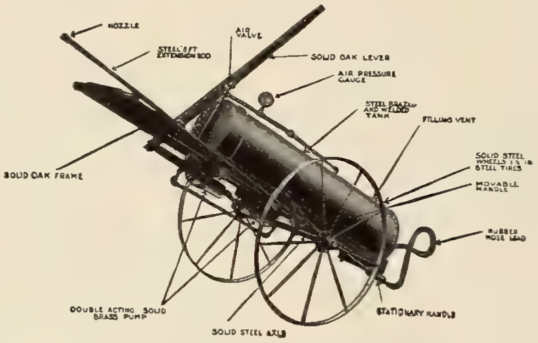
If you have a small orchard or garden, one to five acres, you need this "One-Man" Compressed Air Hand-Power Spray-Pump. A power sprayer is too large, and the ordinary hand-power barrel sprayer, requiring two men to operate it, too expensive and inconvenient. With the aid of

**The "One-Man" Compresse Air Hand-Power Spray-Pump**



you can do your own spraying at approximately half the usual cost. A few minutes' easy pumping compresses sufficient air to spray for fifteen or twenty minutes with a pressure sufficient to carry the spray to every part of the tallest orchard-tree. The pump is made of solid brass, is double-acting, and does not come in contact with the liquid. The machine is carefully made from the best materials for the purpose, and there is no chance of the outfit getting out of order. Special attachments can be furnished for spraying two, three or four rows of truck-crops.

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## Good Spray Materials are Important

Good spray materials are as necessary as a good pump. There are many inferior materials on the market, but invariably, while they may kill the insects, they injure the fruit, burn the foliage and decrease the vitality of the tree. When results are considered, it is obvious that

**Sherwin-Williams Quality Insecticides and Fungicides**

produce the maximum results at a minimum expense. The line includes: S-W New Process Arsenate of Lead, effective against all leaf-eating insects; S-W Lime-Sulfur Solution, for use against San José scale and fungus troubles; S-W Paris Green, for leaf-eating insects, particularly the potato bug, and S-W Bordeaux Mixture (Paste), a fungicide principally for garden use. If properly used, these products will keep your orchard or garden crops free from insects and disease. Look up our Agent in your town, or write for a copy of *How to Spray*. This booklet gives all necessary information.

*In the back of the book you will find a practical spraying calendar. How to Spray will be sent free to any address for the asking.*

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We grow and sell all best varieties of Roses, also Hardy Perennials, Shrubs, Plants, Bulbs, Flower and Vegetable seeds. Safe arrival guaranteed.

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PRACTICAL HINTS for Beginners

## Getting Character into the Garden

THE shrub and shrubby vine are essential to the proper planting of the home grounds, because no other woody plants offer so great a range in variety of fruit, foliage, outline, size, and adaptability to varied soils and conditions. For the smallest bit of ground, in the smallest home lot, a suitable shrub or vine can be found.

In the use of shrubs one seeks to accomplish the utilitarian purpose of screening bad outlooks because he has to, and the esthetic purpose of giving a place a pleasing character, because he wants to. In doing this, if the work is done successfully, then utility and beauty are so combined as to make the place all beautiful without sacrificing convenience.

The distinctive character of a place may be established by decidedly attractive local conditions, such as a tree, shrub, ridge, boulder. The additions here must be made in such a manner as to fix and emphasize, not impair, this original beauty.

The place may have such an unattractive or commonplace character that all work must be new work, and in such work nothing is more serviceable than shrubs and small trees, especially in small and moderate sized places. If there is a particularly attractive view from the selected outlook points, these plants will immediately frame them.

The character of a place may be determined by the house upon it, which if of the bungalow type, will have the horizontal lines most pronounced. If the designer of the grounds desires to carry out these dominant house lines into his foliage, he will seek such plants as the native thorns of the cockspur or scarlet type, the pear-leaved viburnum, Japanese snowball, stephanandra, and Regel's privet.

There may be a very tall and narrow house with limited grounds, where narrow foliage masses are essential to relieve tall, bare wall spaces, and provide screens and landscape frames in narrow soil strips. For this, such plants as the Lombardy poplar, Douglas thorn, panicled dogwood, white lilac, buffum pear, Siberian crab, red cedar, and Irish juniper, would be selected.

It may be desired to have a color scheme of grayish green and soft and fleecy foliage texture. Here the single tree might be the gray leaved royal willow, or the narrow leaved Russian olive, with the sea buckthorn, tamarisk, and *Lonicera Alberti*.

There might be a preference for a special family or for a particular genus, of which there are several that offer enough species with a sufficient variety to meet the requirements of the average home grounds.

In thus establishing a character for the little or the big landscape, either flowers, fruit, or foliage may be incidental, the choice for the landscape composition being determined by the general outline and aspect of the shrub, or by soil conditions. For example, an owner may prefer to accept poor soil and shrubs that will go well therein, even though slowly, rather than to incur the expense of good soil preparation. It very often occurs that there are several varieties, either one of which would have a suitable outline and aspect for the landscape composition. From these a selection would be made to fill each one of the months of the year with the few varieties that are most effective in the color or form of flower, autumn foliage, winter fruit, or twig.

Massachusetts. WARREN H. MANNING.

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LILIES,
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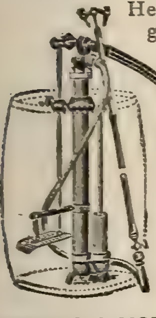
# Bigger Fruit Profits



Here is a spray pump invented by fruit growers. It was our endeavor to secure the best spray pump to use on our 300 acre fruit farm that produced the

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It overcomes every defect found in other makes—it has proved itself best in actual work. Put an Eclipse to work on your trees and earn bigger profits. Write for our fully illustrated catalogue. It tells why you should spray—and why you should do it with an Eclipse. It's free. Write to-day.

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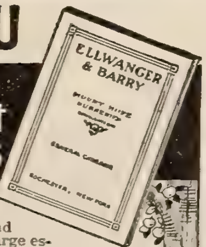

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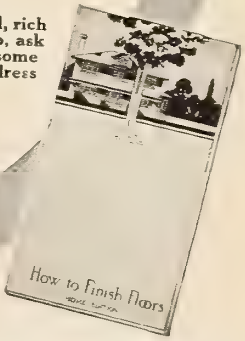

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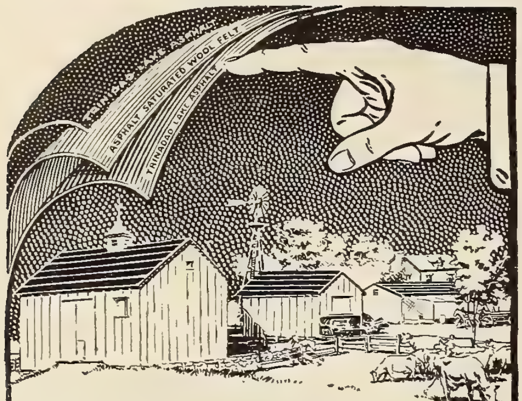

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A large and fine stock of well-rooted plants grown in sandy loam. Good plants; best sizes for planting very cheap. Priced catalogue free on application. Wholesale and retail.

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## Plant Your Onions Now

ONE of the biggest "secrets" in successful onion growing is to get an early start.

The very first day in the spring that the soil in the garden is dry enough to work, a section of it for onions should be plowed or spaded up, and the seed got into the ground without the least delay. Two years ago, a sudden rain-storm prevented my finishing the sowing of the entire onion bed. As it was early in April I did not think this would make much difference. We did not get another rain for a couple of weeks, by which time the part of the field first planted was well up. Although soil, fertilization, and seed were identical on both parts of the field, the portion first sown maintained a very perceptible lead all through the summer, and at harvest time the crop was at least 20 per cent. heavier.

So plan to get your onions sown the first day it is possible to do so; even snow, and light freezing of the soil after sowing, will not injure them.

While heavy, wet, or "mucky" soils will sometimes produce very large bulbs, they are always of inferior cooking and keeping quality. Onions grown on such soils are coarse-grained, tough, and watery, or "soft"; they frequently do not "bottom down" and make bulbs in the fall, but stay green and run all to neck.

An onion of really good quality should be firm-fleshed, well dried-off at the top, bright in color, and have the outside skins almost as thin as paper. To grow such onions, make the "bed" in a rich, sandy loam, such as constitutes a good garden soil. Have it well drained, in order that it may be in shape to work the first thing in spring, and that it may never remain water-logged after heavy rains.

If manure is used it should be old and thoroughly well rotted; green, lumpy, strawy manure will not do. Well-rotted, fine manure not only furnishes plant food in readily available forms, but adds "humus" or a certain moisture-absorbing and retaining quality to the soil. Put the manure in a pile and allow it to heat sufficiently to sprout any weed seeds it may contain; then spread it three to four inches thick and plow under five to six inches deep.

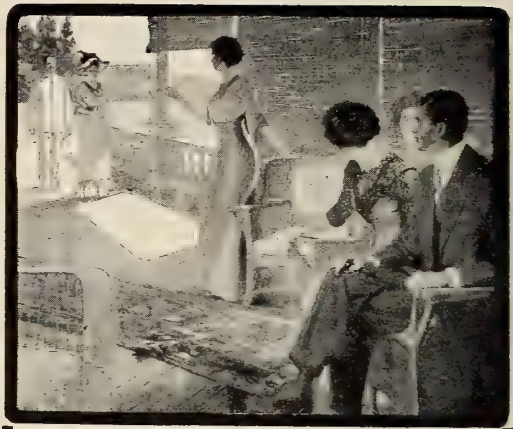
If commercial fertilizers are used, apply broadcast after plowing, and harrow in. Use a complete fertilizer, analyzing about 4 per cent. of nitrogen. 8 per cent. of available phosphoric acid, and 10 per cent. of potash, at the rate of 8 to 10 pounds to every 100 square feet of surface, or about half that amount if used with manure. Wood ashes, hen manure, bone dust, and such special fertilizers are also good.

The beginner with onions seldom realizes how thoroughly pulverized and fine the soil in the bed should be made. After plowing or spading, thoroughly pulverize it with a harrow or a spading fork, and then rake it over by hand with an iron rake until it is smooth as a table. Not a stick or stone should be visible.

Just as soon as it is in this condition, and before the surface has time to dry out, proceed with the planting. The seed should be *fresh*, and the best you can buy. Sow in rows twelve to fourteen inches apart, and half an inch deep. Plant with a regular seed-drill if possible, or else use a board twelve or fourteen inches wide to kneel on while sowing and covering the seed, which should be sown thinly, eight to fourteen seeds to the inch. After covering, press the soil down firmly with the *edge* of the board, both to insure germination and to mark the rows.

The so-called new onion culture is starting the seedlings early, under glass, and transplanting out of doors, three or four inches apart in the row, during April or May. It is not too late to try this method now if you will sow the seed immediately. Fill the seed box with a compost of old manure and light soil, and cover with an inch of clean sand, in which sow the seed in rows three inches apart. As the tops reach a length of eight or ten inches, cut back about a third, and repeat this cutting as often as necessary. When setting out, the roots should be trimmed back at least two thirds.

To get good results, after all this care, the weeds must never be allowed to get a start. Weed the rows themselves as soon as the little onions are big enough to be distinguished from the weeds. Culti-



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*A shady corner at Gillett's showing a clump of Hardy Ferns and Rhododendrons*

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All dust, hair, and filth that fall from the udder are caught by the "dirt shelf." Only absolutely pure milk, just as drawn from the cow, goes into the pail. The only sanitary milk pail that ever proved a real success in every way and received the approval of all cow owners. Easy to wash — just right for pouring and handling milk. If your dealer cannot supply you **We Will Send Pail Prepaid on Ten Days' Trial Free.** After trial send us the money or the pail. **Price $2.50.**

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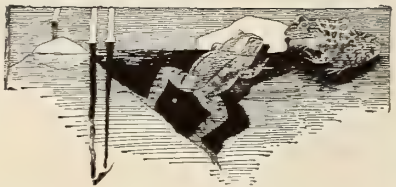

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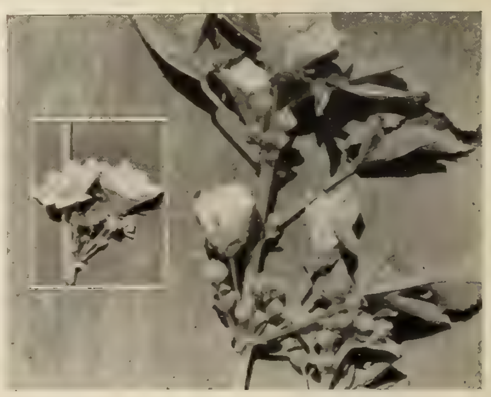
## From Adirondack Gardens

ONE of the pleasant surprises of my frequent horticultural walks abroad was the discovery of half a dozen unfamiliar flowers in the heart of the Adirondack wilderness. Most of them were in a charming little enclosed garden almost twenty miles from a railroad station — a garden where many kinds of annuals and perennials flourished mightily in what would seem to be disadvantageous circumstances. As I was allowed to carry away any plants or seeds that I lacked, the garden gave me a double pleasure. My most fortunate acquisition was what I take to be the creeping phlox (*P. reptans*), which I have seen nowhere else, though at least one grower lists it. This blooms in early May, along with *P. subulata* and *P. amœna*. The deep rose blossoms resemble those of the latter, but the foliage is more prominent and serves better as a ground cover. It has tufts of broad leaves from which spring long trailing shoots that quickly take root near the end. The foliage is light green but takes on a reddish tinge toward autumn. In the same garden I found the only alpine wallflower (*Cheiranthus alpina*) that I have ever seen. I took home a small plant, which blossomed itself to death the following summer but was thoughtful enough to leave behind a dozen or so progeny from seed that I gathered and sowed around it. As compared with the garden wallflower, this plant, with its tiny light yellow blossoms, is inconspicuous; but I have found it worth while in the border because of its color and long blooming period and should say that it would be really valuable in the rock garden. Certainly it is more easily grown and is hardier than the showier kind. I also found blooming there *Malva moschata*, var. *rosea*, and a beautiful white primrose (*Œnothera cæspitosa*), as well as a pretty little pink annual, *Vaccaria Vaccaria*. In the other wilderness garden, six miles from a railroad, the only flower in evidence was one that I had never seen — the hollyhock mallow (*Malva alcea*). It was rather effective there, where its vivid magenta had nothing to fight with, but in my garden I find this annual far from peaceable and I confess I grow it as a collector rather than as an admirer, though I think it has naturalizing possibilities.

New York. H. S. A.



The hollyhock mallow (*Malva  cea*) is a vivid magenta. Be careful what you plant next to it

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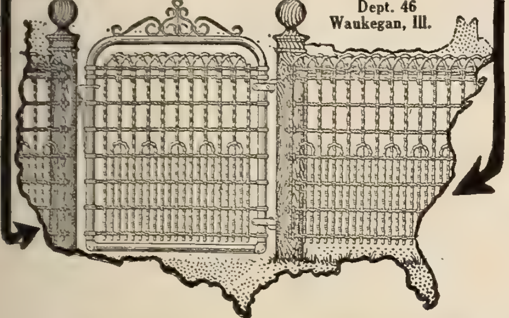

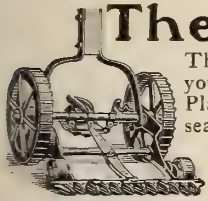

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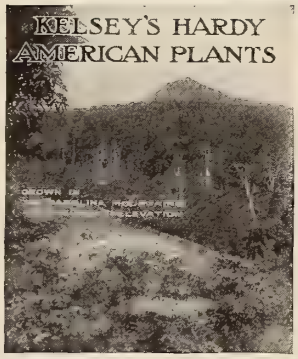

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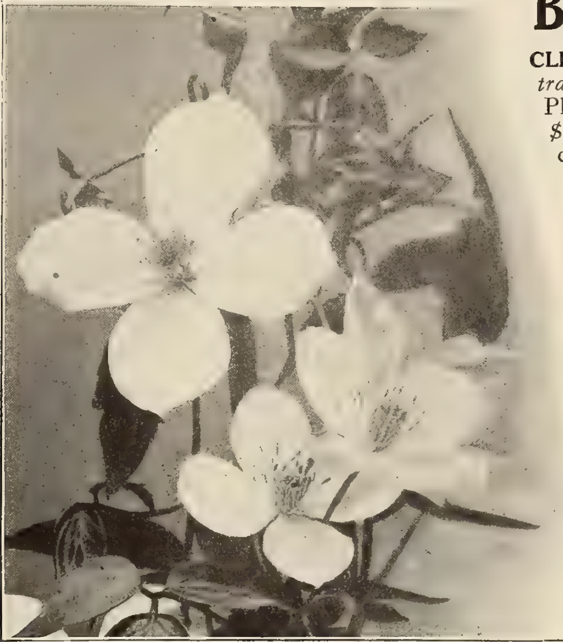

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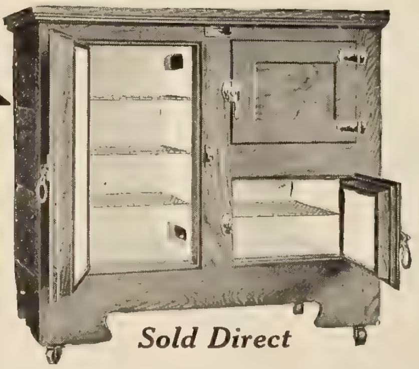

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The following treatment of chard or kale and radishes is simple and profitable, with the added convenience that none of these crops is ordinarily troubled by disease or insects. Plant the radishes in rows nine inches apart, as soon as the cold weather is over. This will be from March 15th to the middle of April. In a week or two, also depending on the weather, sow the chard or kale between every two rows of radish, later thinning the plants to twelve inches apart. This spacing will bring the rows of chard eighteen inches apart, the radishes maturing and being harvested in time to give the larger plants plenty of room. Later, if desired, a third row of radishes can be sown midway between the chards or kales (this being, therefore, between the two earlier rows of radish) for a quick summer or fall crop. Chards and kale can be cut from time to time throughout the season.

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In the four foot space under each trellis lay out two rows of lettuce, a foot apart and eighteen inches from either side. This brings all the ground to be cultivated under the highest part of the trellis; yet this cultivation need not be much, for all that should be required is the occasional use of a scuffle hoe.

The most convenient trellis is made as follows: Build oblong hurdles or fence sections of two 5-foot 2 x 2 or 2 x 3 in. posts, joined by 3 x ⅞ in. furring; one strip six inches from the upper ends, the second twelve or fourteen inches from the lower ends of the posts. These connecting planks may be of any length, preferably a convenient unit of the length of the garden. At intervals of four feet,

These pictures show the International Rose Jury, in the Bagatelle Gardens, Paris, last June. This jury, composed of distinguished rose culturists from many countries, was appointed by the Prefect of the Seine. Our president, Mr. Robert Pyle, was the sole American member of the jury, an indication of the international prominence attained by The Conard & Jones Company as rose growers. In one picture Mr. Pyle is seen bending over the Jonkheer J. L. Mock rose. In the other he stands at the left. Next to him in this picture is England's representative; and then the German expert. The beautiful Bagatelle Gardens contain thousands of varieties of the "Queen of Flowers," including all classes and families.

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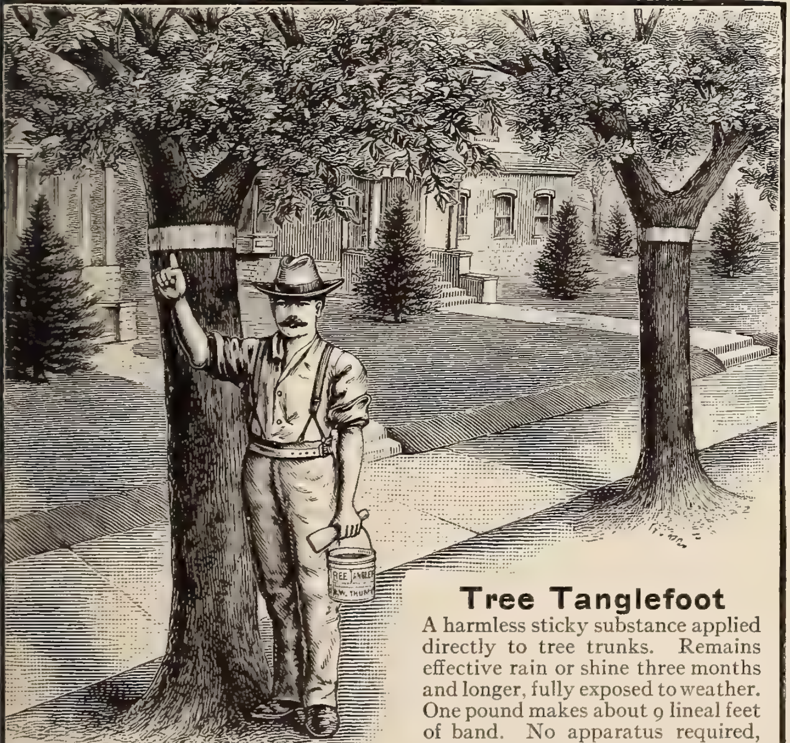

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join these rails by upright strips of the same sized stock. Then add the horizontal rails, eight to ten inches apart, of common plaster lath or any other light stuff. Two of these hurdles, inclined toward each other and loosely nailed or tied at the top, complete the trellis, the legs of which are pushed into the ground when in place. The vines can be supported by tying them loosely to the cross-pieces with raffia. If you desire it and have an available seed bed in which to grow the cucumber seedlings, you can cover the trellis with pea-vines until June or early July, when they will be removed and the cucumber plants set in their places, or at least in the same rows, but three feet from hill to hill.

### ONIONS AND LETTUCE

A third combination is that of onions and lettuce. Onion raised from seed is an all-season crop, and should be sown as soon as the ground can be worked. If we let the onion rows be eighteen inches apart, there is room between each two rows for a row of lettuce, nine inches between the heads. By using a bit of the garden, say two yards square, as a seed bed we can raise lettuce plants for a continual succession all summer, replacing every head harvested with a new seedling plant. Meanwhile the onions are maturing, are profiting by the cultivation resulting from the growing of the lettuce and by the occasional applications of nitrate of soda between the rows, and will be ready by fall, the entire expense of raising them being paid for (and more, too, most likely) by the sale of lettuce.

Nearly all the small-growing vegetables and root crops can be adapted to such schemes as these, which are but suggestions. This sort of intensive cultivation will need, of course, more handwork, and now and then nitrate of soda or other commercial fertilizers, but on very small areas such expenses are, of necessity, low; whereas everything you raise has some value, and you will be surprised to find how many quarts, pecks and bushels a backyard garden is capable of raising.

New York. E. L. D. Seymour.

## How to Have Muskmelons All Summer

MUSKMELONS are such a satisfactory crop for the home garden that it is strange that more amateur gardeners do not raise them. They require special care, but one is well repaid with the abundance and quality of the crop when it has been properly cultivated. From a patch 30 x 50 ft. it is possible to supply a family of seven with a plentiful supply of melons almost until frost.

First, procure good seed. The Emerald Gem is a fine melon for the home garden, sweet and of fine flavor, yellow fleshed though not very large. Long Island Beauty, a green-fleshed variety, Netted Gem and Rocky Ford, are other good kinds. There are many others, probably all good, particularly the Jenny Lind and Nutmeg strains, but the big Montreal melons have always failed with me. Can any one tell me how to succeed with them?

The preparation of the soil is the next consideration. If possible, manure the melon patch in the fall and plow or dig it up. Early in the spring dig and manure it again, using well-rotted stable manure and adding wood ashes if you have them. Melons are gross feeders. They like best a sandy, well fertilized soil. Continue to work over the soil if possible, though this is not absolutely necessary. The first of May prepare the hills. Pulverize the soil well, and every four or five feet take out a little, throw in a spadeful of well-rotted manure, cover with soil and round up. Let these hills stand until the middle of May or later if the weather is cold, when the seeds can be planted, ten to a hill, and watered. The seeds may be started on clumps of sod in a greenhouse if you desire, but I have not found this necessary or, indeed, particularly advantageous. Melons are a late crop, and mature better at their proper season than they do when forced.

Before you plant the seeds prepare a number of boxes as follows. Knock the bottoms from soap, or other wooden boxes, and nail cheesecloth over

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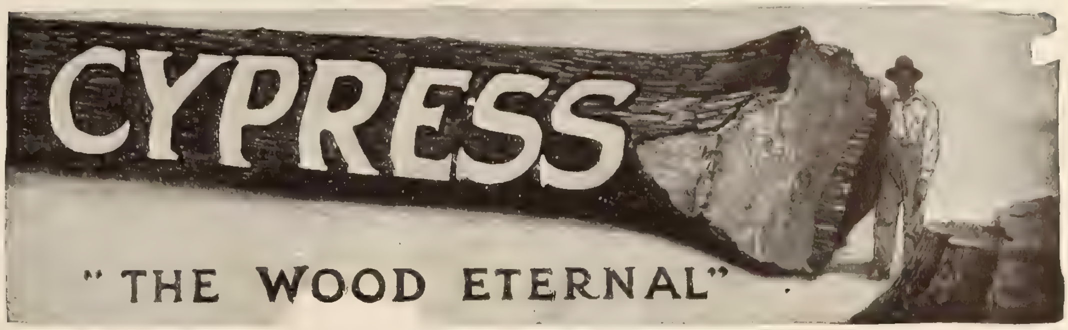

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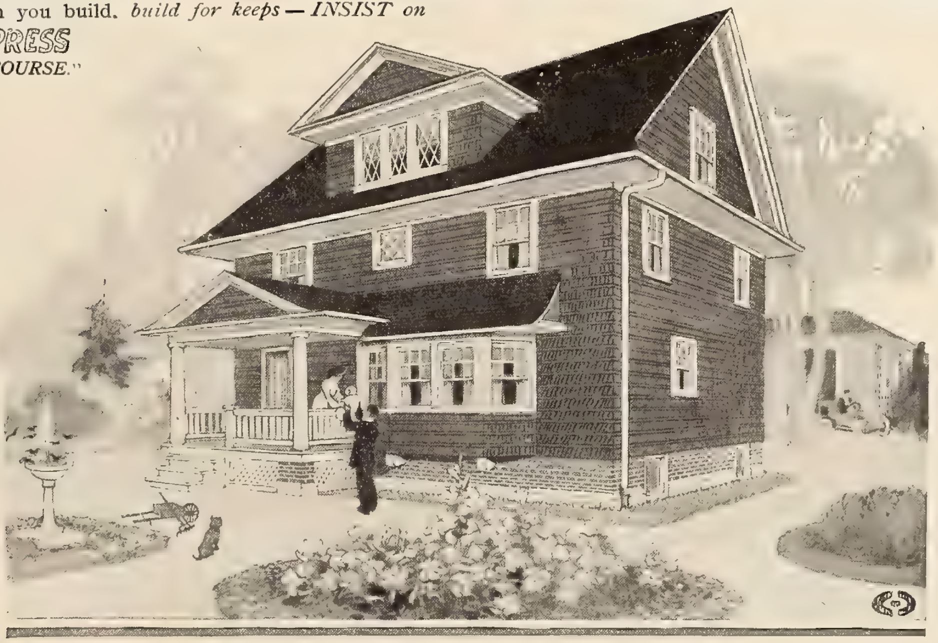

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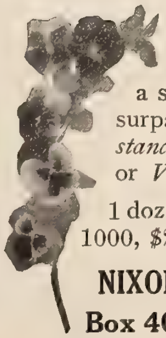

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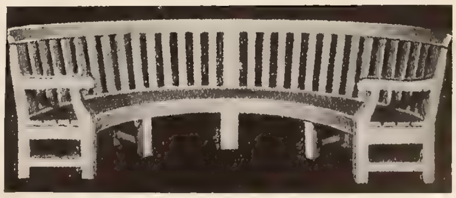

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them. A box should be placed over each hill, when the seeds are planted, and left in position until the vines outgrow them. These boxes are not absolutely necessary, but are most useful, and but little trouble to make. They help the seeds to germinate, act as a slight protection on cold nights and keep the greatest enemy of the melon-raiser, the striped beetle, from destroying the young vines.

When the vines are about a foot long, carefully pinch off the ends. Melon vines are very tender and must not be roughly handled nor trod upon. Keep the vines pinched back throughout the season.

### WHEN TO SPRAY

Another of the melon enemies is blight, and this must be fought by systematic spraying. Begin when the vines are a foot long and spray with Bordeaux mixture, adding arsenate of lead for the bugs. Spray every two weeks, omitting the arsenate when the fruit ripens. Cultivate the melon patch, keeping it free from weeds, until the vines cover it. When the blossoms come, give each plant a quarter of a pailful of nitrate of soda solution, made by dissolving two teaspoonfuls of nitrate of soda in a pail of water. Do this two or three times as the melons develop, or alternate the soda solution with liquid manure. It is wise to place a shingle under each young fruit to keep it off the ground and circumvent the wire worms. Some growers advise mulching the melon patch with straw when the vines are young, in which case the shingles are not necessary.

New Jersey. M. T. R.

## The Mole, a Friend in Disguise

TWO years ago, when we discovered numerous unsightly mole burrows running here and there through our flower beds, we said, with a sigh "What next? Cutworms, tomato worms, black flies and mildew, and now moles." So last spring, when hollyhocks, foxgloves, and Canterbury bells failed to appear, the supposition was that moles had eaten them during the winter, and vengeance was vowed accordingly. The difficulty was that the more we looked into the matter, the harder it seemed to wreak vengeance on the moles, who, in the meantime, were making themselves at home all over the garden.

Then the happy suggestion came to us to apply to the Department of Agriculture for help. The answer was startling and illuminating on the subject of what conclusions we had jumped to through mere prejudice. Moles, according to the Government expert, live entirely on grubs, cutworms, and similar dainties. They are, therefore, better for the garden than much poison and cultivating. The only real drawback is they do often choose for the scene of their labors the soft soil where bulbs or young plants have been set out. This is trying to the gardener's soul, but let him stamp the plant back into place and think of the havoc a cutworm or two would have made with those same young plants!

The moles positively will not eat the roots. In our garden one of the entrances that showed signs of constant use was directly at the root of a thrifty peony, but the plant showed no signs of distress. And as for the loss of plants during the winter so confidently laid to the poor moles, we now believe it was due to the extreme weather, for all the gardens in this section reported similar losses of the less hardy perennials, and they were not all infested by moles by any means.

The Department of Agriculture explains how to kill moles if they do become too zealous to be endured. Capture a fat grub, cut off his head, and substitute a capsule of strychnine. This bait is to be placed in a burrow with due care that the mole shall not suspect any danger.

The best friend of the mole cannot claim that his work is in any way pleasing to the eye, but it is surprising to find how much less you mind the humps of dirt or even an occasional uprooted plant after you get the new point of view. And certainly it is much pleasanter to be able to look with certainty upon one supposed enemy as a friend in disguise!

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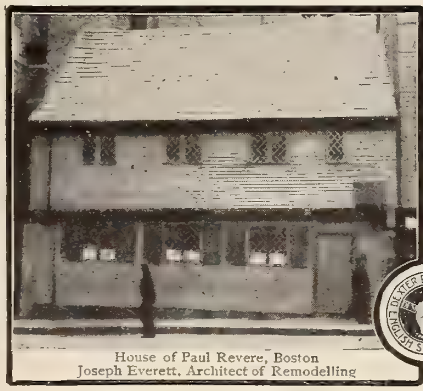

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## Daturas in a Small Garden

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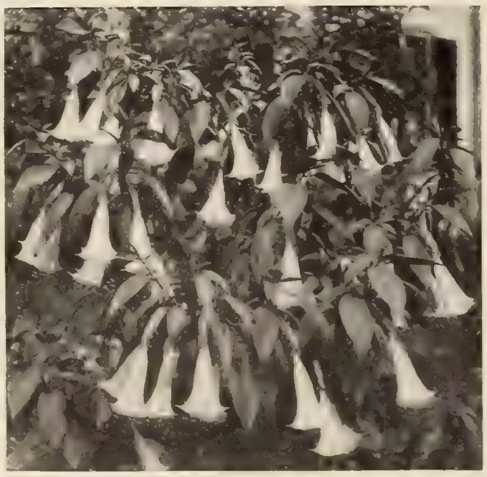

A bed of daturas was the most attractive and remunerative item in my garden last year

Daturas practically take care of themselves. I simply dig them up in the fall, cut them down close, and store them in the cellar away from frost until the following spring. I bring them up early in the spring and give them a good start in a sunny window before setting them out of doors. If I were not so busy with other things I feel sure that I could make a few hundreds of dollars in a season growing these plants and selling them in different sizes.

Massachusetts. J. GAVIN.

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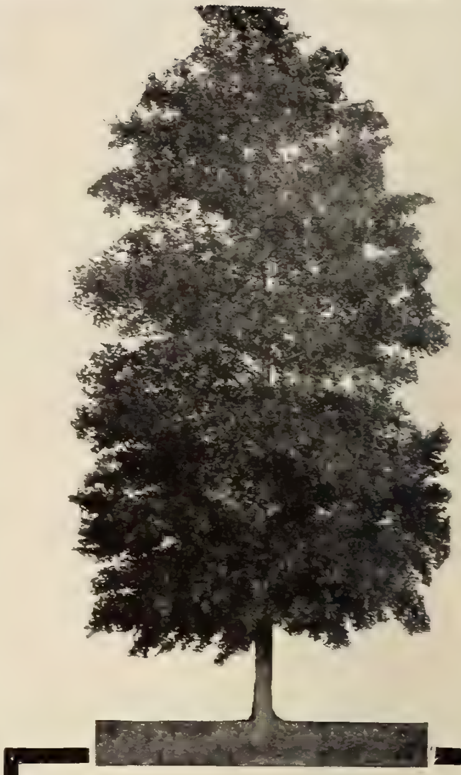

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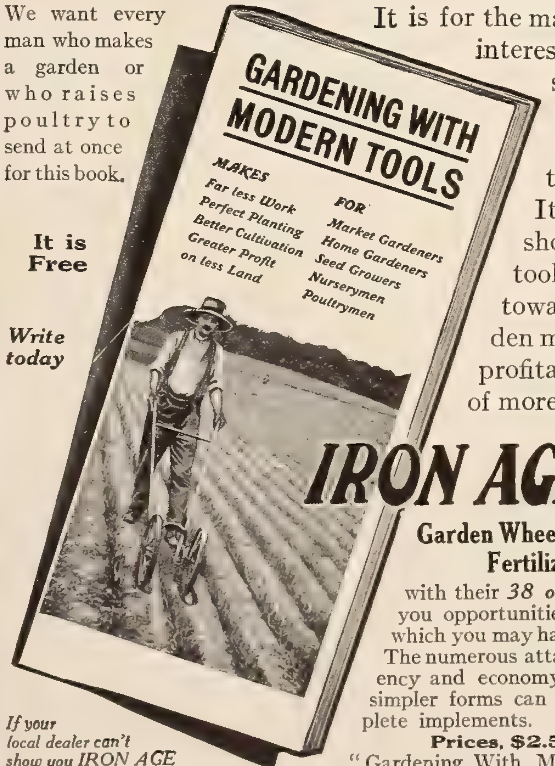

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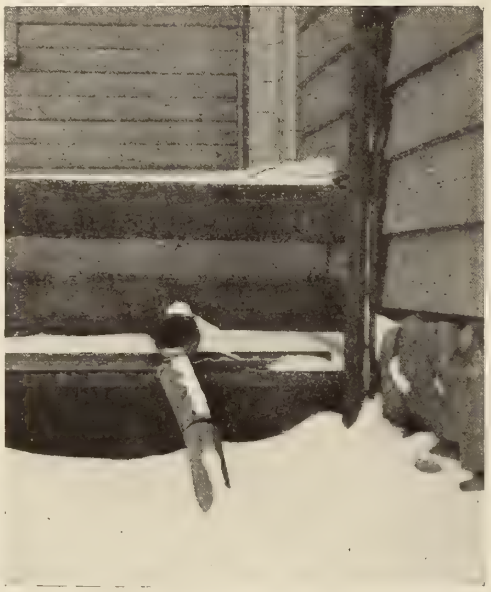
pipe will not stand freezing. By using a large pipe, the danger of freezing is reduced to a minimum.

The soil in the flowerbed was removed to the depth of two feet and two strings of 3-inch tile were laid side by side across the flowerbed, for a distance of ten feet. The iron pipe was connected with the tile by a section of eaves trough which had been discarded. Over the tile, fine horse manure was packed to a depth of one foot and the remaining foot was filled in with earth.

A row of sweet peas was planted on the side of the bed next to the house and the remaining space was planted to dahlias. We soon found that the sweet peas was a mistake. The dahlias which were a decided success grew so rapidly that the peas were soon overshadowed, and while we picked quite a good many, they were crowded out early in the season.



This pipe drains a kitchen sink and sub-irrigates a flower bed

Michigan. C. R. Ross.

## Plumose Asparagus from Seed

I HAD been depending on the florists for plants of the beautiful asparagus for several years until I noticed directions for growing the plants from seed. Last March I started some seeds indoors in a window box and raised an abundant supply of plants for the winter. The process is so easy, simple and inexpensive that it seems worth while to describe it.

The name "asparagus fern" is, of course, a misnomer. The plant is not a fern at all, but a true asparagus, closely related to the familiar vegetable of our kitchen gardens. The true ferns reproduce by means of tiny spores which develop slowly and require better conditions and more care than the average amateur can give. The name plumose asparagus is really to be preferred, or perhaps fern-leaved asparagus. This asparagus blossoms and bears seed in much the same way that the garden asparagus does. The seeds are small, round and black and may be purchased of any of the larger seed houses. The most desirable seeds are those grown in greenhouses, as the plants from them are more likely to do well under indoor conditions. The seeds cost twenty-five cents a packet, naturally being more expensive to produce than ordinary flower seeds.

After you have received the packet of seeds soak them in tepid water for a day or so until they become swollen. Then plant an inch deep in a window box filled with good garden soil. They will come up as slender stalks before long, and these stalks will soon spread out to form attractive little plants with the same characters as the larger ones. As the weeks go by new stalks will appear from the roots so that soon you will have a lot of vigorous seedlings that are of greatest interest.

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**Morris reflected for a moment.**

**"That means," he said at length, "that we should know where to send the present to."**

**"How do you make that out?" said Abe.**

**"R. S. V. P.," Morris replied, emphasizing each letter with a motion of his hand, "means: Remember to send vedding present."**

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plant these asparagus seedlings to a partially shaded place in the outdoor garden where the soil is rich. Give water and tillage through the summer as you would for any other plant and in September you will have as attractive a set to transplant to window boxes or flower pots for indoor growth as you could wish. The plants should be as good as those you can get from the florist, and to the owner they possess a greater interest in that they represent months of watchful experience in growing them.

These plumose asparagus plants will thrive either in a sunny window or in one with little sunshine.

The commonly known asparagus "fern" is easily raised from seed started indoors in March

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After the transplanting a few of the stalks are likely to begin to drop their leaves. Cut such stalks off close to the ground. New ones will soon appear.

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## Concerning Colt's Foot

THE first colt's foot (*Tussilago farfara*) that I ever saw was in one of the New York parks. Curious to know what it was, I inquired of the gardener, and he not only gave me the information but told me where I could get all I wanted of it without so much as saying by your leave. Not far away, an old mansion had been sold and the fence around the extensive grounds, which were six feet below the street level, was removed. There, on the bank thus disclosed, colt's foot had run wild for years and had crept up to within a few feet of the sidewalk. Doubtless it had "escaped" from the garden of the homestead. As it was spring there could be seen only the scaly scapes, many of them crowned with a single yellow blossom, very like that of the dandelion, only much smaller. I dug some roots and planted them in my garden, where I have found the source of "colt's-foot rock" rather attractive. Very early — this year it was the third of April — the blossoms give the border a pleasing touch of yellow and when they are gone, there comes foliage that keeps in good condition until frost. Of the two I prefer the foliage, the cordate leaves, covered with a whitish down on the under side, being really handsome. The only trouble with colt's-foot in the garden is that it spreads so rapidly, by both root stock and seed, that it must be watched carefully. If one has the room, it is better to let it grow naturally. It is supposed to prefer wet places and a clayey soil, but I have seen it doing equally well in garden loam, and on a very dry bank. More for the foliage than the flowers, I would suggest it for clayey banks that, on the country place, usually offer planting difficulties. It would clothe all summer many a spot that now is needlessly bare.

New York. H. S. A.

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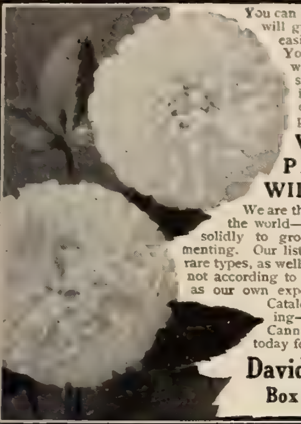

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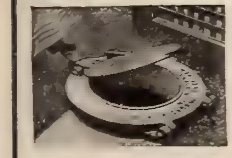

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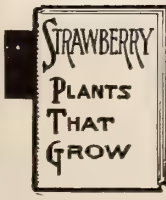

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The FORESTER'S MANUAL ERNEST THOMPSON SETON

The FORESTER'S MANUAL

By

Ernest Thompson Seton

Chief Scout of the Boy Scouts of America

(*No. 2 of "The Scout Manual Series"*)

THIS is a guide to the trees of Eastern North America which gives three things: First, the identification of the tree, made absolutely easy by drawings and descriptions; second, where each tree is to be found — with actual maps of the range of the species; third, it tells the properties and uses of the different trees from the point of view of a scout or woodsman — a unique feature which makes the book of exceptional interest. It would be hard indeed to find elsewhere such points as the weight of each kind of wood; the dyes made from bark or leaves; the method of using spruce roots, for instance, to make baskets or for lacing material — these and a thousand other items of woodcraft drawn from Mr. Seton's long study and experience will be found in this invaluable manual.

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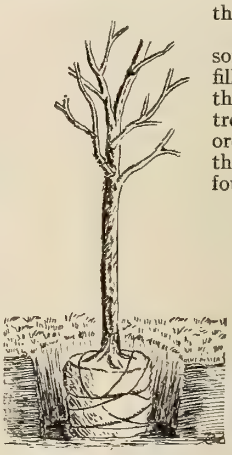
## Practical Pointers for Moving Large Trees

THE moving of a large tree often presents more difficulties in contemplation than in the work itself. There is no need for complicated machinery.

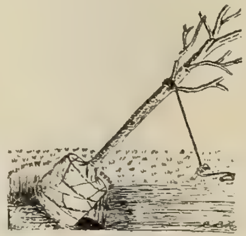
First of all dig a circular trench around the tree to be moved so that plenty of soil will be left about the roots. This trench should be far enough away from the tree to make it unnecessary to cut any roots that are thicker than a man's finger. Likewise, the trench will need to be wide enough to permit a man to stand in it and to dig with some degree of comfort. Undermine the earth surrounding the roots to a depth a little more than the width of the earth surrounding the roots. Just before undermining, fasten a rope to a strong crotch in the tree and so pad it with burlap that pulling will not injure the bark. Stakes driven into the ground at a convenient distance, or trees, telegraph posts, etc. will also afford means of fastening the rope in bending the tree from side to side. Where a direct pull on the rope does not give sufficient power to swing the tree from one side to another the help of block and tackle will make this part of the work very easy.

After having dug in under the tree as far as possible without loosening the earth from the roots, burlap should be tucked in and tied firmly under the ball of earth and also be continued up around the side.

After this has been done some loose earth is to be filled in under the burlap and the rope so adjusted that the tree may be tipped over in order that the other half of the ball may be cut from its foundation. This, too, is to be bottomed with securely tied burlap and earth filled in underneath. Now we have the tree with a large ball of earth about its roots standing in a hole in loose soil.



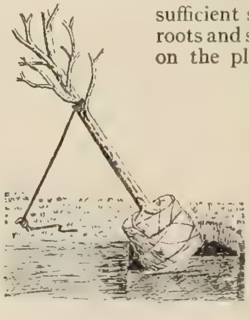
Dig a hole all around the roots and wrap the ball



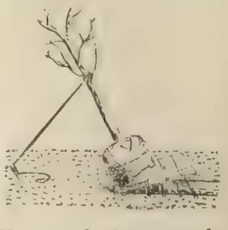
Tip the tree from side to side and fill in below the ball

The next step is to bring that ball of earth to the top of the hole without shaking the soil from the roots. Here the rope comes into play. First tip the tree over to one side as far as may be and fill in with soil under the side tipped up. Put just enough soil into the hole so that the tree may be readily tipped over to the opposite side when soil is to be again filled in. This method of procedure will finally bring the roots to the top of the hole and, moreover, helps to pack the soil that is thrown back into the hole so that there will be little or no settling afterward, especially if, during this filling in, the soil be also tamped.

Construct a strong platform of sufficient size to hold the mass of roots and soil, which may be placed on the platform by inclining the



Work to the top of the hole and slide it out



Upon a platform on rollers to facilitate moving

# Easter Gifts for Your Flower-loving Friends

My new variety, "Peace"

Flowers occupy a large place among the gifts made between friends at Easter-time —but their beauty soon fades and the donor is forgotten in a few short days. Why not send a gift that will give pleasure for months rather than days?

For those of your friends who love the out-doors, and who grow flowers, a box of Gladioli bulbs would give more real pleasure than a box of cut flowers, for stored within the bulbs are days and days of delight as the flower spikes develop and the great blooms open.

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is particularly appropriate as an Easter gift. The bulbs are large and sound, and will produce great spikes of wonderful flowers of the *purest white*. I have prepared *special boxes of this variety for Easter* and will send them to your friend's address, postpaid at these prices:

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Your order will be forwarded according to your directions a day or two before Easter (April 7th), with your card of Easter Greetings.

I shall be glad to supply other varieties if you desire. These may be selected from my catalog which tells just how to grow these magnificent flowers and also shows many uses for them, both in the garden and indoors. Write for a copy today.

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W. F. ALLEN
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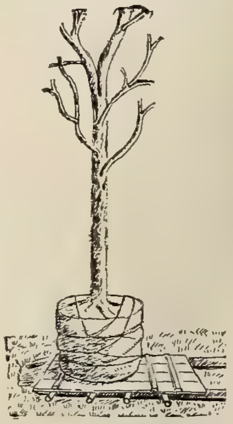
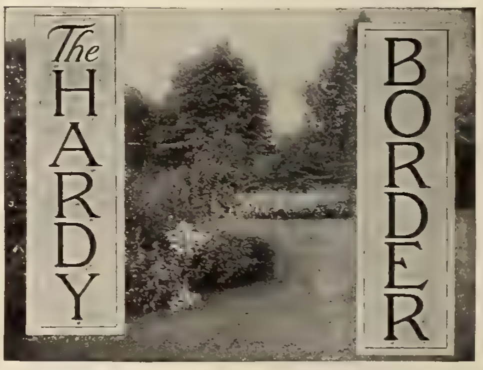
tree as before to one side and pushing the platform underneath. Put planks and rollers into position so that when the tree is standing erect it may be rolled to any desired place much in the manner of moving a house. If the intention is to move the tree a considerable distance it can in this manner be loaded on to one of these low hung, strongly built wagons that are used for carting heavy masses of stone. In loading, make the incline from the ground on to the wagon as gradual as possible, and block securely to prevent all chance of a breakdown. Pulling up this incline will have to be done with block and tackle.


Once free and clear, the tree can be moved around anywhere and lowered into its new location

This method enables one to move a tree at most any time of the year, as it is more in the nature of repotting rather than a tearing away of the roots from their native soil.

North Dakota. C. L. MELLER.

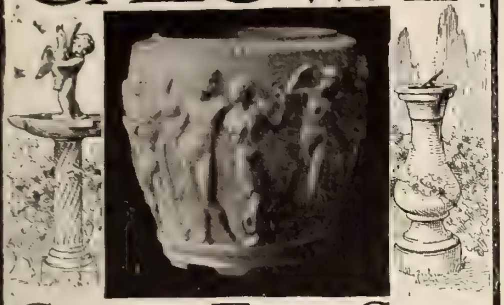


## The Beautiful Auricula

IN 1909 I made up my mind that I could grow the auricula (*Primula auricula*) if I tried, despite a reputation that has kept it out of most American gardens. I bought one plant in May and in October had the good luck to receive a present of nearly fifty seedlings. Some of the latter were not over half an inch high but every one pulled through the winter in the open border with no protection save a few loose leaves under a bridge of cornstalks. They gave me only one solitary bloom the next May, even the larger purchased plant failing me, but a year later I had most encouraging floral reward. In fact any one of the single stalks of bloom was beautiful enough to reward me for the little labor that I had expended upon the plants, which had then withstood two winters without mortality. The chief care was seeing that they did not get too dry in summer. I found that I had given them too hot a place at first; so I moved the entire lot. Most of them are now in raised beds where an apple tree shades them in hot weather but does not shut off the sun when they are coming into bloom. Raised beds are necessary, as the plants must have good drainage. I am not sure that I have yet found the ideal conditions for auriculas to make themselves thoroughly at home in a southern New England garden, because some of my plants still refuse to make leaf growth that is necessary before the bloom is normal. I think, however, that I can bring these around by next May if I use a little fertilizer. Auriculas—the alpine type is used for the garden—may be taken up after blooming and planted in rows in some shaded spot for summer growth, but what I am trying to do is to get them so they will stay in one spot like my other hardy primulas. Meanwhile I hope that my success so far will encourage others to take up the culture of a remarkably beautiful hardy plant that is widely honored in England.

Connecticut. B. G.

# GALLOWAY



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A school for theoretical and practical instruction in gardening and other branches of horticulture. Special attention given to the practical side of the work.

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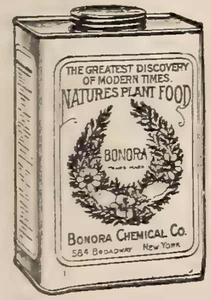

If you have not used it, write for descriptive circular. Marvelous results. THOUSANDS USE IT. THOUSANDS ENDORSE IT. Luther Burbank, John Lewis Childs, Dingee and Conard say it is wonderful. Ask your dealer for it or order direct.

Put up in dry form:

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| 1 lb. | make | 28 | gallons, postpaid | .65 |
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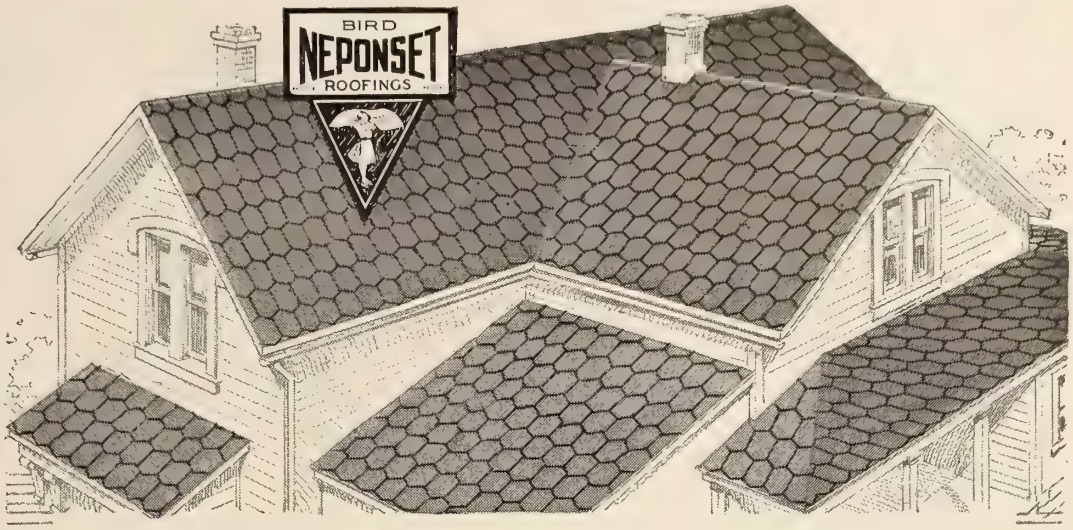

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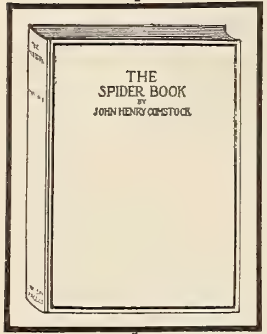

The Spider Book

THIS is one of the most interesting and important nature books of the decade. "The Spider Book," by John Henry Comstock, now Senior Professor in Cornell University, is a scientific work, but is written with the clarity and simplicity of style that has made his "Manual" a classic in the literature of insect life. The reader is, at the outset, relieved of the old, widespread, false notion that spiders are venomous and detestable creatures. On the contrary, as, family by family, they are described and named, their wonderful habits hold the interest, and send the reader out to watch the doings of these industrious, skilful, beautiful creatures. This first comprehensive book on the habits and classification of a vast natural group is a notable contribution to the literature of science.

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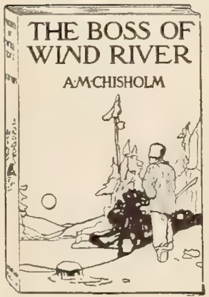


The Boss of Wind River

By A. M. Chisholm

¶ Given a big, husky youngster just out of college who finds himself suddenly heir to his father's heavily involved lumber business, with a lot of crooked rivals; add a nice outdoor girl, the daughter of an old friend in the same business, and you have a group of circumstances apt to produce interesting results. Nor does Mr. Chisholm fail to take advantage of his chance; you follow the life of the lumber drive, where a man depends on his muscle and his motherwit for his ability to handle his crew; and the happenings on Wind River make the best kind of reading.

Illustrated in colors. Fixed price, $1.20 (postage 12c.)

Garden City **Doubleday, Page & Co.** New York

## Getting Ahead of the Season

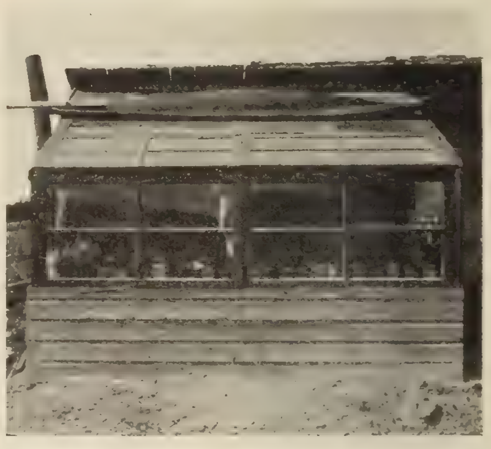
MY LITTLE hothouse cost exactly four dollars to build, and from it we have had fresh vegetables before the gardens in the neighborhood could even be planted!

The hothouse was built as an addition to a small poultry house. In this locality we keep a fire all winter in our poultry house. This hothouse was to be a "lean-to" addition, as I had the north wall already constructed.

To attach the new part, I nailed a 12-foot piece of 2 x 4 in. board, lengthwise of the poultry house, eight and a half feet from the ground; and another piece of the same dimensions six inches from the ground. The first one was to attach the roof of the hothouse to the poultry house; and the second one was to have the floor of the hothouse nailed to it.

I then laid the foundation timbers (two 12-foot hewn sticks, 6 x 6 in.) parallel with the lower piece of 2x4 in. x 12 ft. board, nailed to the poultry house. On this foundation I laid a floor of rough boards, 8 feet wide and 12 feet long and leveled it by putting blocks under the stringers. I was then ready for the walls.

The hothouse has a southern exposure with the south wall 6 feet above the floor. As the floor was 8 x 12 ft. I planned to have the highest part of the roof 8 feet high. I cut three 6-foot pieces of 2 x 4 for uprights for the south wall, and three $8\frac{1}{2}$-foot pieces of 2 x 4 for two rafters, one from each of the three uprights to the first piece of 2 x 4 that was nailed to the side of the poultry house.


This hothouse, which cost four dollars to build, was an addition to the poultry house

These I put in place, spiking them securely to the floor and to the poultry house wall. I used the storm windows from the house, as these were always removed in the spring. These windows were about $2\frac{1}{2} \times 4\frac{1}{2}$ ft.; two were put in south wall, end to end, horizontally; four made the roof; and one in west end, placed horizontally, to let in the afternoon sun. These windows were fastened to the uprights and to the rafters, and all the space left was filled in with two layers of rough boards with a sheet of tar paper between. The entrance was at the east end.

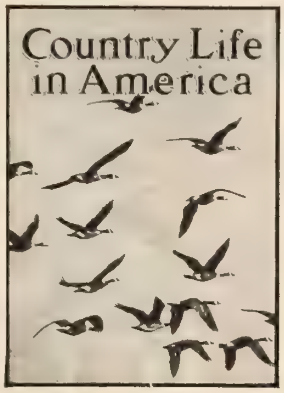
The cost of the house was about four dollars, but this did not include the windows. The first layer of boards on the walls, roof and floor may be any kind of old rough lumber. The outside layer should be a cheap grade of drop siding. Provide a door at one end. I cut a hole in the side of the poultry house and put the stove pipe through into the hothouse, and let it run horizontally the full length of the house and out the west end.

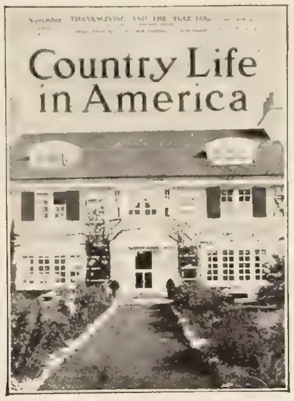
With the flowers I grew in this little house I had wonderful success. I had pansies that measured three inches across, and had stems six inches long. Back of the pansies was a bench of parsley, radishes, lettuce, Swiss chard, fox-glove, dahlias, and forget-me-not plants, and across the end was a deeper bench full of three-year old roses. I cut some blooms five inches across from a Frau Karl Druschki plant.

Minnesota. George E. Wolfe.

Country Life in America

Country Life in America


Country Life in America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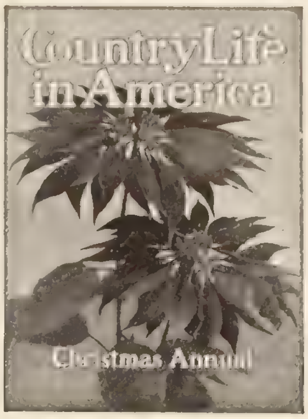
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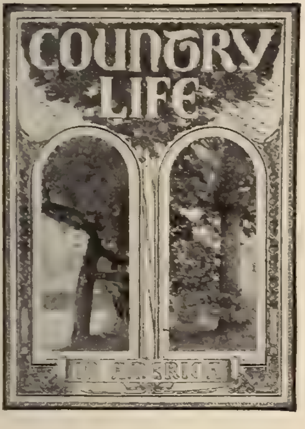
Christmas Annual

# Ten Years of Country Life

## An Amazing Record of Progress by Authorities in Various Departments of Country Living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IN AMERICA

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If you are interested in any one of the many phases of the great country life movement which has swept over this land since the opening of the new century, you will find a wealth of interest in

## The Anniversary Number

# Country Life in America

**An Historical Document** for preservation in your family, and a hand-book for your present guidance.

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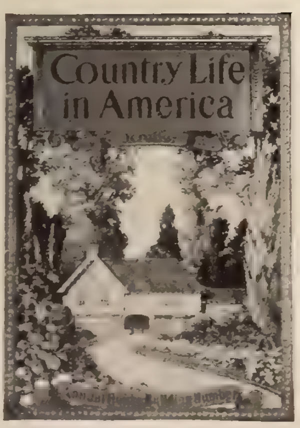
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The fruit exhibit shown below won 3 first, 2 second, 1 third prize. Note the 7 cups.

*You* can get as perfect fruit as this, whether you have five trees or five hundred.

Your garden truck and shade trees, too, can be protected from their insect enemies if you spray with

## ELECTRO Arsenate of Lead

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It is 100% stronger than other brands—has greater distribution, adhesion and killing power—yet is absolutely safe. Mixes instantly with water or can be used dry as a dust. This is the only arsenate of lead in non-crystalline form.

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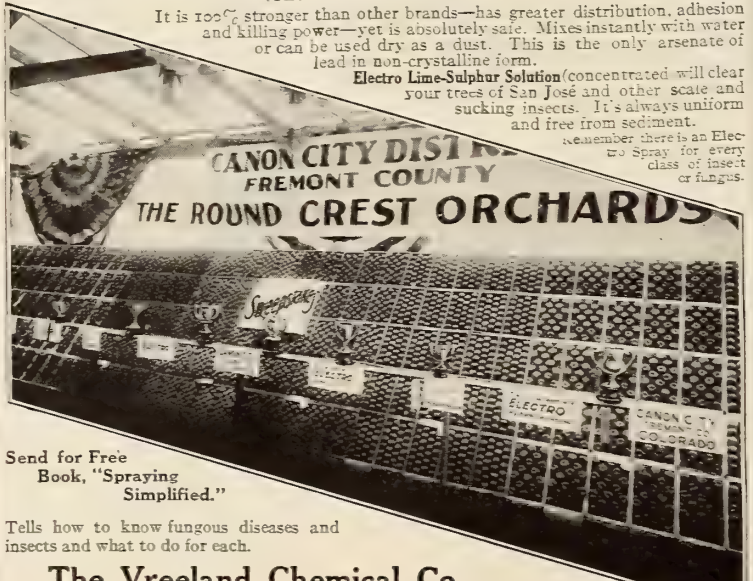

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Tells how to know fungous diseases and insects and what to do for each.

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## Dutch Bulbs and Plants Direct from Holland

Have you ever seen a real Dutch Bulb catalog—*a catalog of Dutch Bulbs issued by the house that grew them?*

Do you understand the difference in sizes and qualities that exist in Dutch Bulbs — do you realize that your lack of success with these Harbingers of Spring may be due to the bulbs you plant, rather than to any fault of your own?

All these points are explained in our

### 1912 Catalog of Dutch Bulbs

This catalog will appeal to all flower-lovers—to the man who buys ten tulips, hyacinths, or daffodils, and the man who buys ten thousand.

It lists and describes the newest varieties; gives combinations that have been proved satisfactory for bedding purposes, and for forcing. It suggests the varieties to plant in combination more accurately than would be possible, if we did not maintain at our Sassenheim Nurseries unique testing beds for this very purpose.

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The roots of fruit trees occupy only about a quarter of the ground space for the first twelve or fifteen years. No business man would think of allowing three-fourths of his capital to lie idle for that length of time! There is just as good a market for berries as for apples. Strawberries, Himalaya berries, Currants, etc., will begin bearing in a year from planting. The first crop will give a net profit of from $50 to $400 an acre

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**Berrydale Experiment Gardens**
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Also called Side-Saddle Flower; Huntsman's Cup; Indian Dipper.

This strange and beautiful perennial is a native of the cool, wet and mossy bogs of Maine and is perfectly hardy from Labrador to Florida. It is one of the few carnivorous plants of North America. Its leaves are true pitchers, some holding a wineglassful of water. Will thrive in a bowl of water indoors or out and is a most welcome addition to the fernery or aquarium, furnishing endless interest to the whole family, while in almost any wet or swampy place along a brook, river or pond or in or near a spring it is perfectly at home. Its flowers are as remarkable as its leaves.

A fine specimen sent postpaid for 25 cents or three plants for 50 cents.

**MAINE PLANT CO.**
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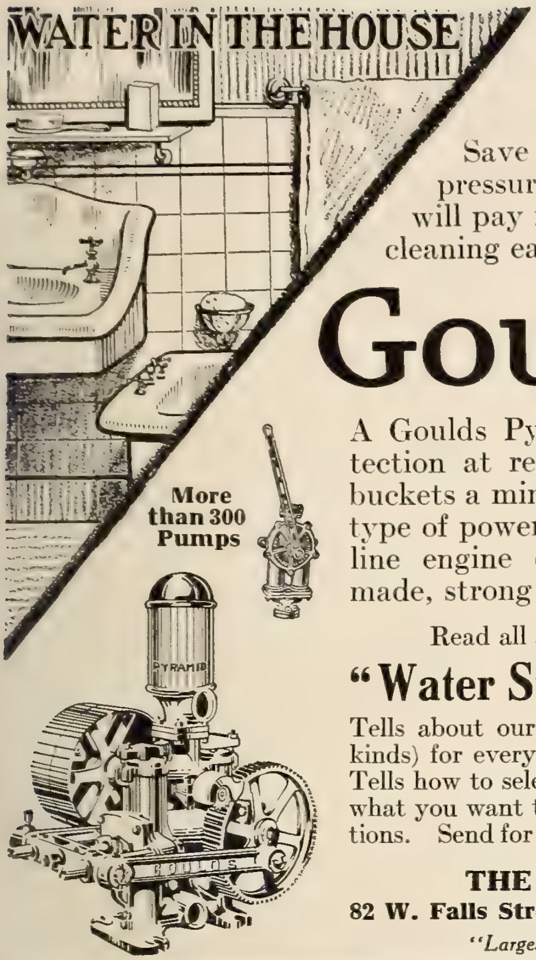

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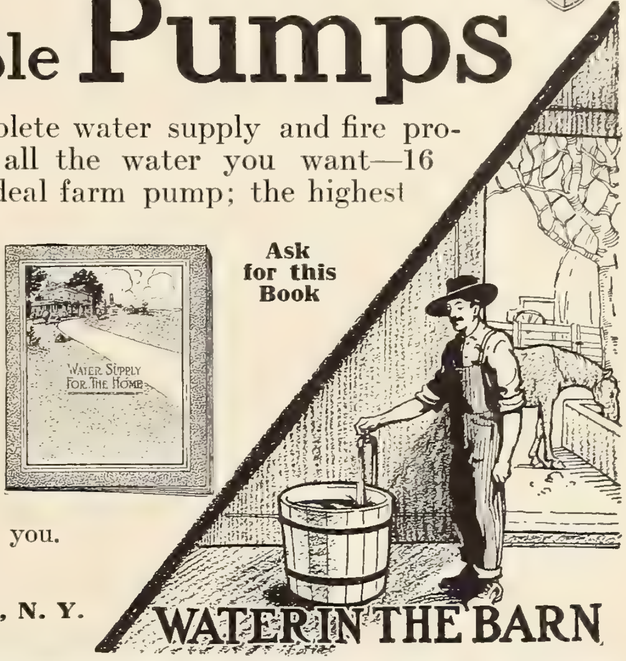

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**82 W. Falls Street** **Seneca Falls, N. Y.**
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# As You Plan for Summer's Flowers Remember Fairfax Roses and Dahlias

You are now probably making active plans for next summer's flower garden. My Fairfax Plants will enable you to establish one that will be a lasting joy, or increase one you now have.

Dahlia Master Carl

**Fairfax Roses Excel** Because my Nurseries are located where roses grow unusually well; because I understand rose-growing thoroughly, and have added to this knowledge modern methods of propagating plants and filling orders.

My new types of Giant and Cactus Dahlias, and my Exhibition Chrysanthemums, bear flowers which you will be proud to own. My new Cactus Dahlia "Master Carl" frequently bears flowers 6 or more inches across.

**My New Book "Fairfax Roses" Is Free to You** Write me before you order Roses, Dahlias, Chrysanthemums, Cannas or Bedding Plants of any kind. I grow extra-fine plants, and can ship them *anywhere* with perfect safety.

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Many a woman irons till late at night, sacrificing health, strength, and beauty, who could be all through with the ironing bright and early in the morning by using a SIMPLEX IRONER.

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# BULBS THAT BLOOM

## Cedar Acres Gladioli are as Beautiful as Orchids and as easy to Grow as Potatoes

DO YOU know that the Gladiolus has been developed and improved until now it is, without exception, the most useful and beautiful flower in the garden? Richness of coloring, delicacy of shading and profusion of bloom have been secured without sacrificing the sturdiness of the plant. At Cedar Acres we have contributed much to the work of making the modern Gladiolus the superb flower that has justly been called the "orchid of the garden." Some of the finest varieties have been originated at Cedar Acres, and for these and for our simple and effective methods of culture many awards have been made.

### As a Cut Flower

there is no plant in the garden that deserves comparison with the Gladiolus. If the spike is cut when the first flower begins to open, it gradually unfolds, flower after flower, and gives a succession of surprises for a week or ten days. And you can grow them easily—as easily indeed as potatoes. It is simply a matter of buying good, strong bulbs and following our instructions.

## *SPECIAL OFFERS*

**Dawn (Tracy's).** The most beautiful shell pink Gladiolus ever offered. A long graceful spike of magnificently formed flowers, all open at one time. The keeping qualities of this variety surpass anything grown at Cedar Acres and its color and texture make it indispensable as a cut flower and for bedding. 25 cts. each, $2.50 per doz.

**Sanguine.** A brilliant, bright red, with stippled throat. A tall grower with immense wide open flowers, five to eight open at one time, splendid foliage, making it an unusually attractive variety. 35 cts. each, $3.50 per doz.

**Mrs. James H. Lancashire.** Large flowers, exquisite cream color, with carmine stripes on the lower petals. One of the most pleasing of the light colored varieties, flowers open at one time, and of excellent keeping quality. $5.00 per doz.

**Liberty.** A bright red with strikingly marked white throat. Strong habit and a favorite. 25 cts. each, $2.50 per doz.

**Independence.** A brilliant rose pink, with richly marked throat. A long, strong spike of wax-like flowers; one of the best. 10 cts. each, $1.00 per doz.

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### THE GIFT BOX

Let us send it, with your card, to a friend who loves flowers and has a garden. It is ideal as a gift, because it means months of beauty and enjoyment to the recipient.

**50c box contains 12 selected bulbs**
**$1.00 " " 25 " "**

Full cultural directions with each box.

**Baron Hulot** (Blue Jay). One of the finest blue Gladioli. A deep violet blue with finely shaped flowers. $2.00 per doz.

### Cedar Acres Gladioli

won four firsts out of five entries, at the American Gladiolus Society's show at Baltimore, Md., August, 1911. Other awards, last year, include silver medal, Mass. Hort. So.; four firsts at Newport, three firsts at Rochester. In the cut flower market, they **command a price six times as high as the prevailing market rates,** because the flowers are larger and better. These flowers are raised in our fields from Cedar Acres bulbs, without stakes or watering, by the same cultural methods we recommend to our customers.

## *SPECIAL OFFERS*

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**Orchid Flowered Seedlings.** Seedlings giving a wide range of color at a reasonable price. To see them blooming is the only way to give them adequate description. 50 for $1.00, 125 for $2.00, express prepaid.

The famous **Cedar Acres Mixture** gives a great variety of wide open flowers of exquisite colors and marking and should be planted in large quantities. 50 for $1.00, 125 for $2.00 prepaid. $12.00 per thousand, express collect. 125 will plant a bed 4 feet square, giving a mass of color and bloom from July to frost.

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**Augusta.** A very fine paper white, with lavender anthers. Strong spike, often having two or three branches. 50 cts. per doz.

**Sunrise.** The finest clear canary yellow variety, with no markings. Long spike of dainty flowers, making an excellent combination with America or Baron Hulot. Fine for table decoration. $2.00 per doz.

**Mrs. Francis King** (The Original). A most beautiful flame pink. Immense flowers on a spike growing 4 feet high with 18 to 20 flowers, 6 to 8 open at one time. A magnificent variety. $1.00 per doz.

**Jean Dieulafoy.** A lovely cream color with carmine blotch. Superb for bouquets. $2.00 per doz.

**Harvard.** My introduction of 1907. A perfect "Harvard" crimson in color. Very popular as a cut flower and especially effective for table decoration with green foliage, because of its long graceful spike of wide open flowers. Many open at one time. $1.00 per doz.

**One each of the twelve named varieties for $1.50, two each for $2.75, post-paid; six each for $7.50, express collect.**

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LET ME HELP YOU TO RAISE BETTER GLADIOLI THAN ANY YOU HAVE EVER SEEN

For years I have devoted all my time and thought to improving the Gladiolus and raising better bulbs. It is both my business and my pleasure. I will gladly answer any questions in regard to the "Orchid of the Garden," its culture, the best varieties, etc. There will be no charge.

Send for beautiful illustrated booklet, describing many varieties and giving the real truth about each. The picture shows actual Cedar Acres Gladioli.

## B. HAMMOND TRACY

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WENHAM, MASS.

THE COUNTRY LIFE PRESS, GARDEN CITY, NEW YORK

MAY
1912
Vol. XV. No. 4

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Grafting and Budding
Dwarf Tomatoes
Flowers for Poor Soil

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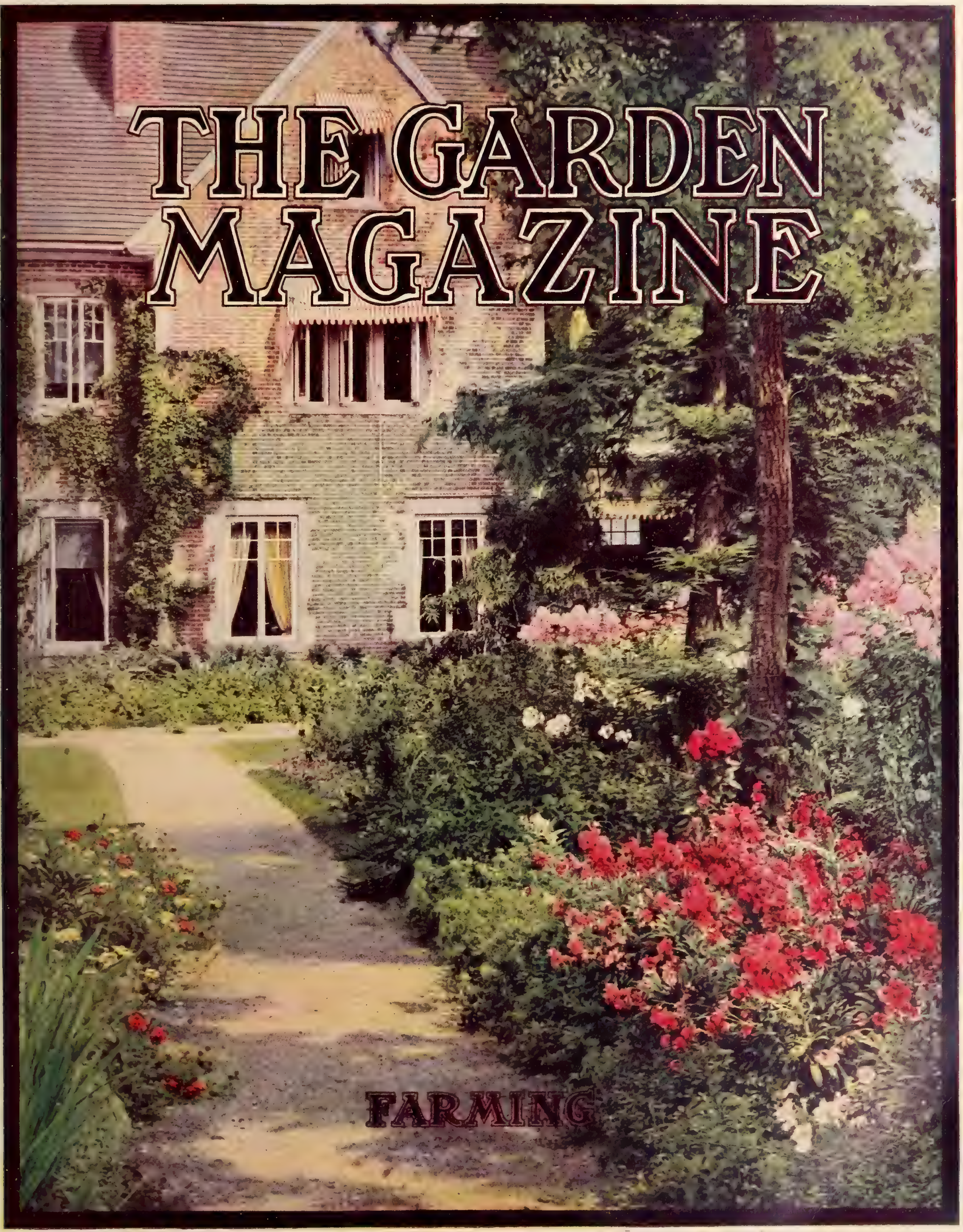

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THE WORLDS'
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Bobbink & Atkins New Hybrid Giant Flowering Marshmallow

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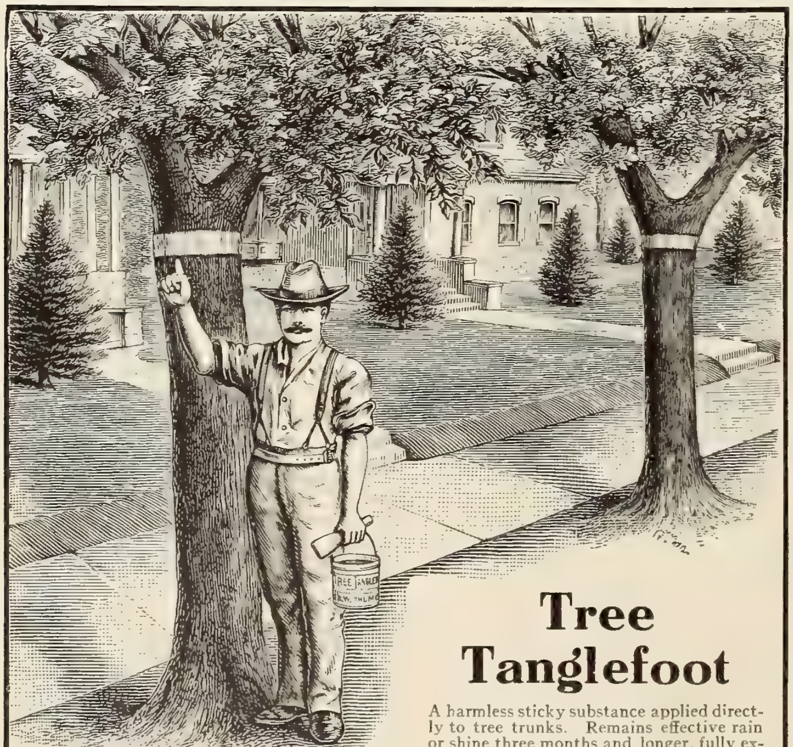

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Price: 1-lb. cans, 30c; 3-lb. cans, 85c; 10-lb. cans $2.65; 20-lb. cans, $4.80, For sale by all reliable seed houses.

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*Manufacturers of Tanglefoot Fly Paper and Tree Tanglefoot*

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The most wonderful—most beautiful roses ever produced. Large, gorgeous blooms each measuring three to four inches in diameter. Produces twenty times as many blossoms as the old American Beauty Rose—every one just as fragrant and beautiful as those you get at the greenhouse.

This new rose is a result of a cross between the old American Beauty Rose and an unknown seedling and is very hardy. Has large glossy green leaves that remain on the bush all summer. Can be trained successfully to trellis or can be grown as a pillar rose as shown above.

One-year plants, carefully packed, postpaid, for $1.00 each.

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is thoroughly equipped and in charge of a competent designer. Our trees, shrubs and vines are unequaled. Write us if you wish to consult our representative when next in your vicinity.

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*Hoopes Bro. & Thomas Co.*

*West Chester, Pa.*

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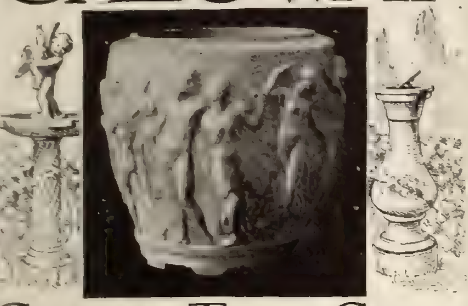

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# DANYSZ VIRUS

contains the germs of a disease peculiar to rats and mice only and is absolutely **harmless to birds, human beings and other animals.** The rodents always die in the open, because of feverish condition. The disease is also contagious to them. Easily prepared and applied.

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As soon as the washing is out of the way the dryer can be *easily and quickly* removed. Other dryers are made in one piece, heavy and hard to handle. The

**HILL'S CLOTHES DRYER**

is in two light parts and a moment's work removes it from the yard with no tax upon the strength. It is set up with equal ease and all danger of accident to your clothes prevented by the patent device which locks the reel in place.

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Bring out the natural beauty of the grain of the wood, and prolong its life. Best English ground pigments used—colors cannot fade. The soft artistic effect harmonizes with natural surroundings far better than paint—and paint costs twice as much.

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Use our 22 miniature shingles in deciding on color.

Doubleday, Page & Company

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**By Elizabeth Hays Wilkinson**

*Photographs by Cornelia Clarke*

NEVER were such alluring pussy pictures as these put in a book, and the interesting part of it all is that they are real photographs! A little girl whose home was on a farm in Central Iowa, had, as prized possessions, two kittens (Peter and Polly, to wit,) and a camera. Her photographs of her pets were so irresistible that a magazine editor published a whole series of them, much to the delight of several thousand readers. They are here gathered together as illustrations for a very charming story written by Miss Wilkinson.

*Illustrated with photographs in color. Net, 50c. (postage 7c.)*

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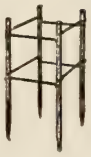

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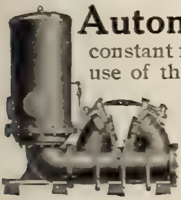

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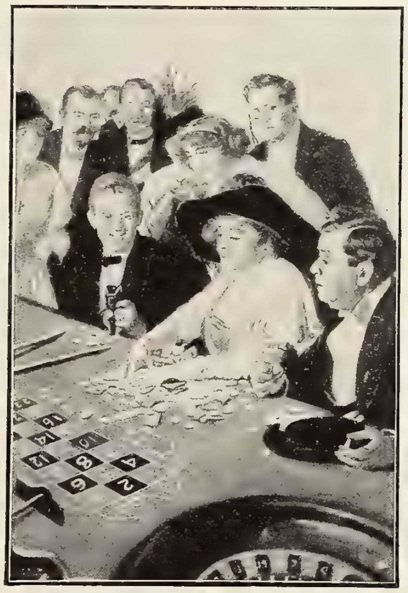

IMAGINE a young girl brought up in a convent suddenly thrown, through an unexpected inheritance, into the exciting, multicolored life of the Riviera, and you have the picturesque opening of this story. Mary Grant is carried off her feet by the subtle fascination of Monte Carlo, and her utter innocence of ordinary conventions prevents her from having the slighest idea of the situation into which she is rapidly drifting.

The hero of the tale is a recluse about whom gossip has been busy for many years without ever satisfactorily explaining the mystery which surrounds him. He is sometimes seen in the Cap Martin woods riding or walking and it is the lovely face of Mary Grant which draws him for the first time into the gay life at the Casino. How, after many misadventures, this romance is finally put right in the garden of the Curé of Rognebrune, an exquisite little spot set like a bird's nest on the edge of the cliff, is a very charming story.

In this tale the Williamsons have set out to give a true and intimate picture of the real life of the Riviera, and they have filled their pages with strange and exciting incidents of the "azure coast." There are tales of the Casino at Monte Carlo and its odd secrets, of the gamblers grave and gay, of the little English and American colonies at Mentone, Monte Carlo, and Nice, of the adventurers who come out, of the quaint Italian peasant-life — in a word, of that feverish and unique life of the Riviera which the authors know at first-hand. As a picture of that corner of the world we do not believe it has ever been equalled.

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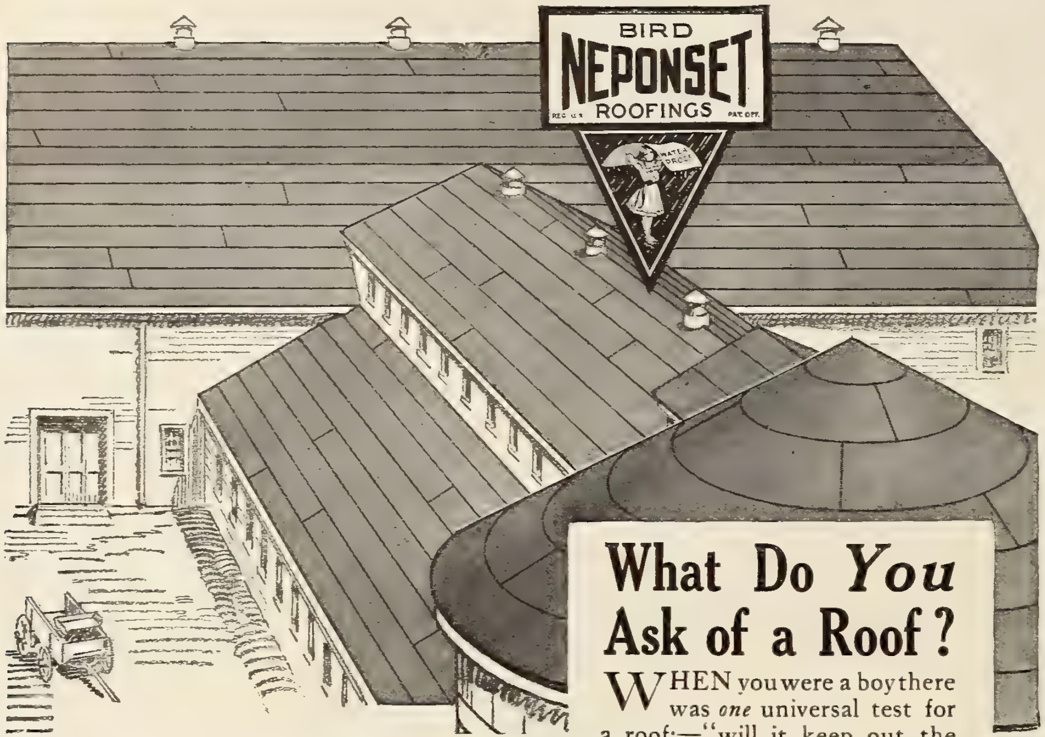

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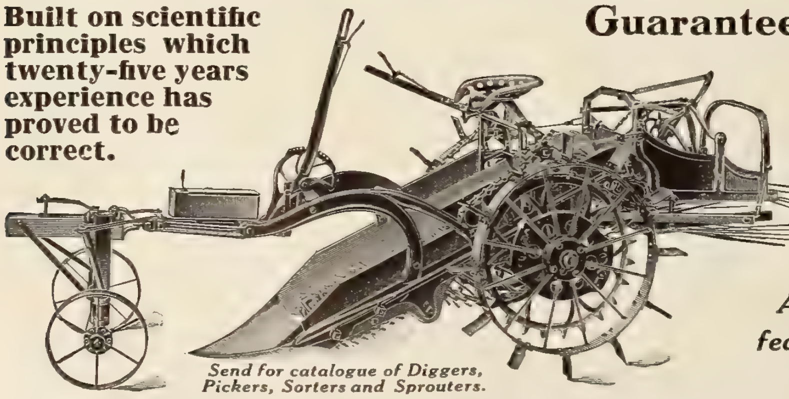

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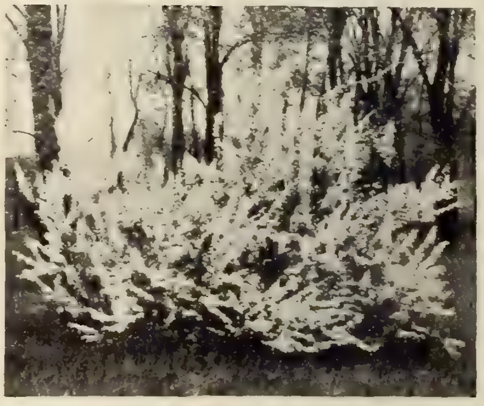
## The Showy Bridal Wreath

THEY christened it the "button bush"—the children of the neighborhood — because the plump, round flowers looked, they said, like little buttons. But it is really the bridal wreath (*Spiræa prunifolia*, var. *flore pleno*) although its common name has been misappropriated by the single bridal wreath (*Spiræa Van Houttei*). You will find it in old-fashioned gardens, mostly, for in these days the favorites of long ago seem to be neglected.

*Spiræa prunifolia* has one remarkable feature — it will thrive absolutely without care. Once planted and well established, it will increase in beauty each year. In deserted door yards, where it has been without attention for a generation, it blooms each year. The shrub shown in the picture has been growing in heavy sod for fourteen years, and during that time it has not been pruned or given any other attention.

Prunifolia reaches a height of six feet and has a more erect habit of growth than most of the spireas. A single specimen will reach a width and breadth of ten feet. The flowers, which are of the purest white, are less than a half-inch in diameter, but they are very double, layer upon layer of petals making them a quarter of an inch thick. They make up for their small size by being so numerous that they almost touch all the way along the branches, and a bush in bloom appears as a mass of white.



The double bridal wreath thrives without any great care and is a mass of white when in bloom (*Spiraea prunifolia*, var. *flore pleno*)

The flowers come before the leaves, as is the case with *Spiræa arguta*, and remain attractive for about four weeks. Because of its late blooming — prunifolia is one of the latest spireas — it prolongs the spring show of flowers and helps to bridge the gap between the early-flowering shrubs and the midseason kinds, like philadelphus.

The bush is not particularly attractive in foliage, but it gives a distinctive touch to the landscape at all times, and is particularly attractive in winter.

Illinois. Fred Haxton.

## The Gentianella

EVERYBODY goes crazy over the lovely gentianella, or stemless gentian (*Gentiana acaulis*); so I don't mind saying that I fairly danced for joy when I saw it for the first time blooming in an American garden last May. There was only a single blossom, but it was perfection; and, oh, that unsurpassed, deep blue! This was in a New England rock garden where the plants were blooming for the second time since they were brought from Switzerland three years before. In this particular garden the gentianella has offered no special cultural difficulties and I fancy that one good reason why an alpine commonly grown in England is supposed not to be adapted to American gardens is because it has not been given a fair trial. One thing this grower learned about the gentianella: after twice throwing out the earth in the seed pans because no plants hove in sight he discovered that the seed does not germinate until the second year.

New Jersey. L. A. S.

**Doubleday, Page & Company**

*By the Author of "The Circuit Rider's Wife"*

# The Recording Angel

## By Corra Harris

THERE is a freshness, an original unconventionality about Mrs. Harris's novels which simply can't be given in description. And it is this amazing, *realness* (which you don't realize until you break the spell by putting down the book!) and irrepressible humor which have placed her at one bound among the small band of modern novelists whose work literary people take seriously — and the public delightedly. And what utterly fascinating company it is the reader plunges into in this Georgia tale! Jim Bone, vitalizing his sleepy native town from his Western experience; and fair-haired Sylvia of the mysterious eyes and mouth — whose complex nature so stirred the prodigal and unrepentant Jim. What more delicious morsel than the description of the company of near-authoresses assembled in Mrs. Fanning-Rucker's parlor. A figure not to be forgotten, too, is pathetic, weak, old Elbert White with his one redeeming quality of adoring his blind saint of a wife, who all innocently becomes the "Recording Angel" of the community. It's like having some shrewd laughter-loving friend tell all her cherished best stories of the quaint people she's lived among for years.

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# Pleasures and Palaces

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## By Juliet Wilbor Tompkins

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MARIE ROSE had never seen the inside of a kitchen: meals came, in her experience, when you pressed a button or commanded a waiter. So when she was beguiled by Cousin Sara Dugmore into trying home-life in an apartment, with the invaluable Miss Salter as housekeeper; and when this perfidious lady failed to arrive as promised the first evening—why Marie Rose found herself staring starvation in the eye though surrounded by bountiful supplies and a city of shops. If you wish to be really diverted, come and behold this dangerously attractive young person making a first acquaintance with the unyielding nature of a can of soup when she has never had to distinguished between a can-opener and an ice-pick. Her temporary neighbor, Galen Ward, engineer, miner and camper, was hugely excited when he first came to the rescue. And that was the beginning of the story—which is as bright and amusing and as full of real humor as any you'll run across in a long course of contemporary reading.

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# THE TALK OF THE OFFICE

"To business that we love we rise betime
And go to 't with delight."—*Antony and Cleopatra*

### ABOUT COMPLAINTS

A publishing house like ours has to do with several thousands transactions a day and there are three main chances for mistakes. To begin with (if you will excuse us for saying so) on the part of the customer. For instance, we get money constantly in plain envelopes with no means of identification, not a word of writing, and in other ways our friends make mistakes which appear to be ours; then, secondly, we have plenty of opportunities to make mistakes ourselves when we actually get the business in hand; and thirdly, after the magazines or books leave our hands a great number of errors may be committed by the express companies, the post office or the railroads which transport the articles.

The point we wish to make is this:

Doubleday, Page & Company are willing, indeed anxious, to rectify any error that we may make, or anybody may make in transactions with us. We have a complaint department which gives careful attention to every letter that comes in. Our statistics show that for the month of February (the last figures we have complete) the actual number of complaints were reduced one-third from the record of last year, and for every six complaints recorded we were at fault once, the other five belonged to some one else.

The worst complaints of all are those not addressed to us but are spoken of to other people; these do us no end of damage. If you receive a badly made book or magazine, or have any transaction with Doubleday, Page & Company which does not please you, we beg that you will notify us and give us a chance to explain or rectify. We want to know if our efficiency has improved one-third or whether our customers are only becoming too good natured to complain.

### THE HARVESTER,

by Gene Stratton-Porter, author of "Freckles," was the best selling book in the United States in the month of February. Published last summer, it has month by month increased its friends until it is now the book most widely purchased in the whole country. This is because it has had the best of all advertising — the recommendation of one reader to another — the only advertising which creates a really large popularity.

The Harvester has been inspiring to a good many people and its influence has been widespread. Here, for instance, is an extract from a letter written by a prominent American business man, recently received by Mrs. Porter:

> I want to thank you for what you have done for me in writing "The Harvester." I am ashamed to confess that until I read your book the sex question never appealed to me as you put it. I never stopped to think how small and mean a thing a cheap conquest was in comparison with captaining your own soul. I am writing these lines and signing them with a name and business address you can locate if you desire, because it is right that you should know that, through having read your book, at least one man washes out past records and starts anew. For the remainder of my life I stand on a moral record as white as David's and lend all my influence toward the same among my employees.

### LAST CALL

Every year a good many hundred people are disappointed to find that the annual issue of THE GARDEN AND FARM ALMANAC is, as the booksellers say, o. p., or out of print. It costs more to reprint this annual than the reader pays for it. We shall not print another edition this year and there won't be a copy left by May 15th. If you can find it at a newsstand or book shop, the price is 25 cents; if we mail it to you, we add 10 cents for postage. 1912 edition was the most successful and largest we have issued. It is a good almanac, and the only one of its breed.

### COMING

Soon after this is printed we shall have ready a new novel by the Williamsons called the "Guests of Hercules"; a story of Monte Carlo. The authors have lived on the Riviera for years and they know Monte Carlo, and describe it as it has never been described before — a true picture of the remarkable life of that famous rendezvous of the world.

### RENEWALS

The best evidence that a publisher can have of the success of a magazine is to tally the renewals of subscriptions. If the readers like a magazine they renew their subscriptions; if not, they turn a deaf ear to the notice: "Your subscription has now expired." It has pleased us to watch the renewals since October and to note that the percentage of renewals has increased this year over last from 10 to 30 per cent., for all of which we are profoundly grateful.

### IRIS IN THE GARDEN

These paragraphs are usually devoted to the modest statements of achievement, or near achievements in connection with publishing ventures; but we should like to speak of one matter of perhaps greater importance. In May we hope those of our readers who are within striking distance of Garden City will stop in at Country Life Press to see one of the most interesting little collections of Iris. It is not so large as it is choice — about 1,200 specimen plants, the gift of our esteemed contemporary, Mr. Edward Bok of Philadelphia. The bulbs are planted in the court around the fountains in front of the building.

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But—the desire of man to live in Nature did not go. The rough bark of trees, the blue skies, still hold their appeal.

So he went back into the wilderness, and there fashioned for himself a seat from the rough barked trees therein.

It served so well, that he brought this work of his hands, with other pieces of like craftmanship and beauty to match, back to the city.

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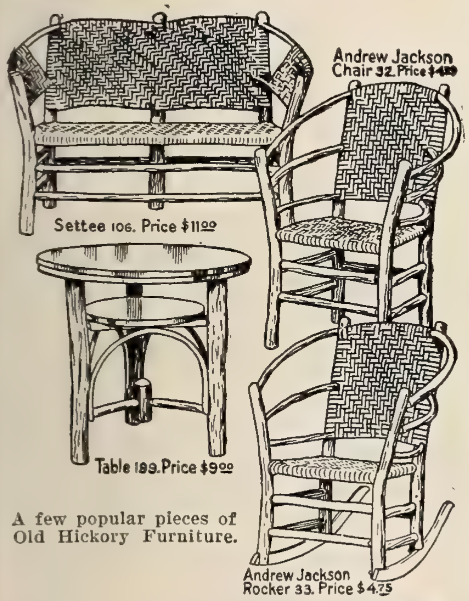
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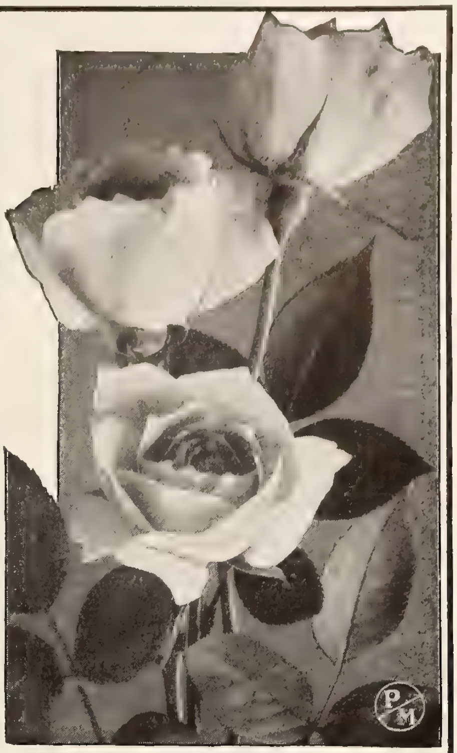

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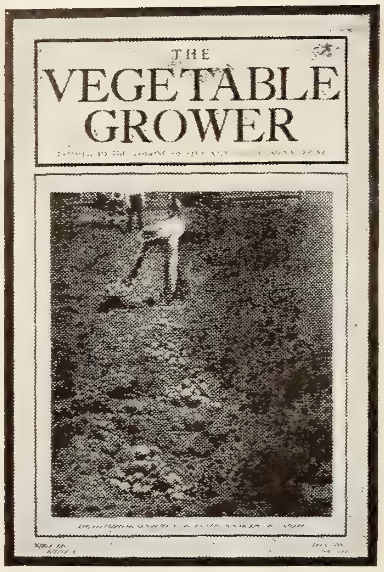

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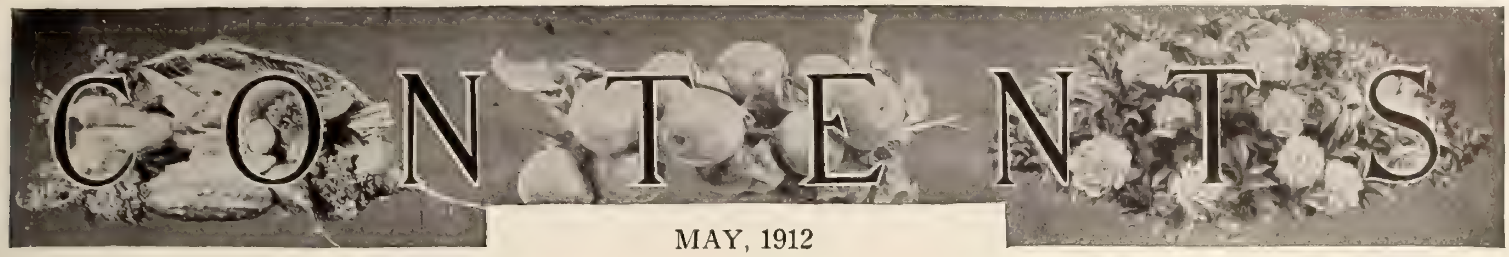

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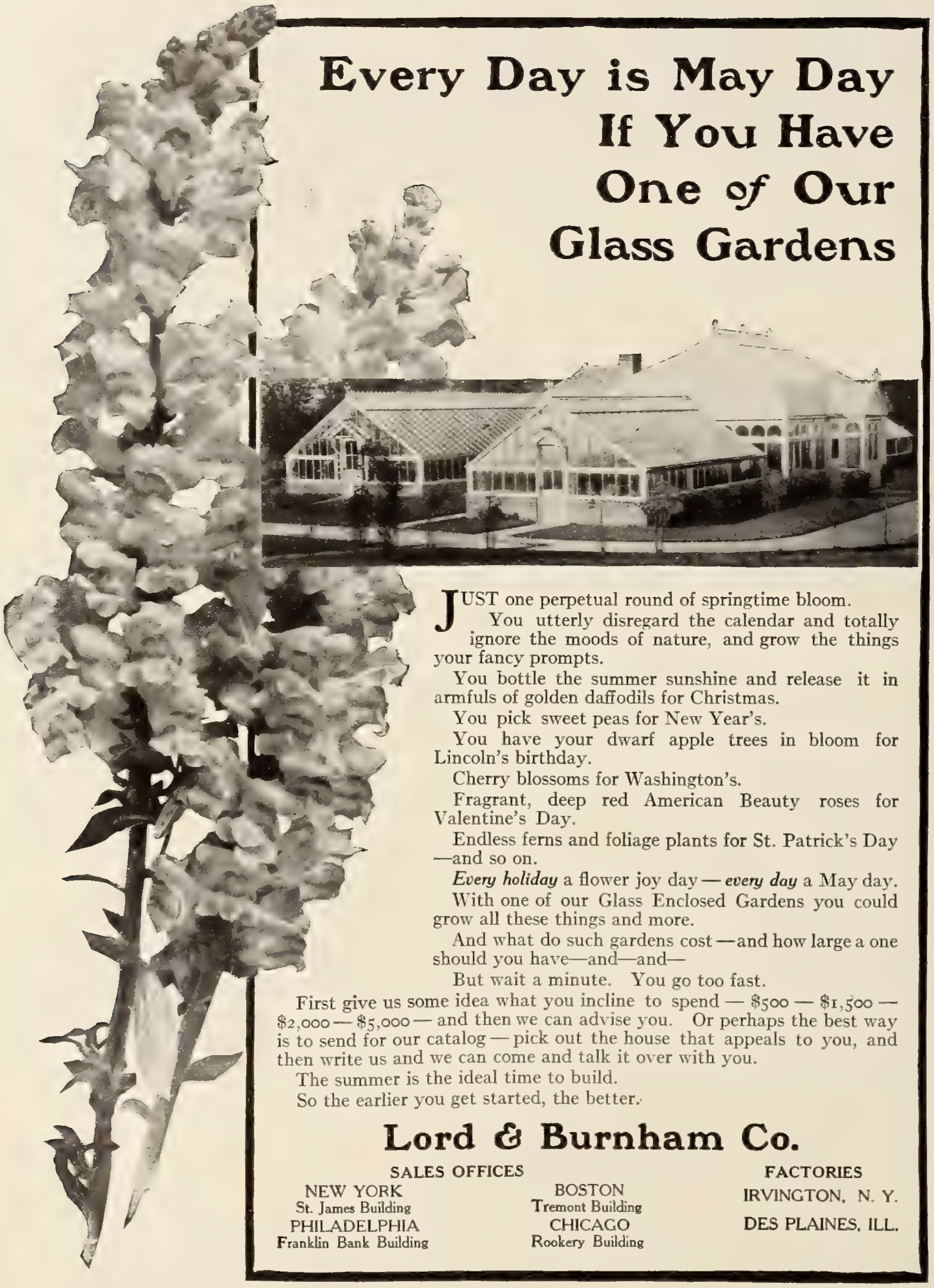

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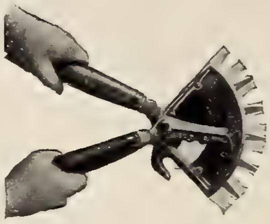

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# The Garden Magazine

VOL. XV—NO. 4
PUBLISHED MONTHLY

MAY, 1912

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The MONTH'S
REMINDER

[For the purpose of reckoning dates, New York is generally taken as a standard. Allow six days' difference for every hundred miles of latitude.]

Jot down these thinning distances: beans, turnips, leeks, 6 inches; corn (in rows), carrots, beets, onions, salsify, 3 inches; kohlrabi, parsnips, 4 inches; lettuce, okra, 9 inches; potatoes, corn, cabbage, tomatoes, 12 to 30 inches; vines 3 to 10 feet.

Get new strawberry plants by rooting runners in small pots plunged near old plants.

The accompanying map, reproduced from a chart issued by the United States Weather Bureau, is a good subject for study. Of course averages may be deceitful, but you should know whether or not it is an average season in your locality, and *don't plant tender things too soon!*

### IN THE ORNAMENTAL GARDEN

Some shrubs are already flowering. Prune these lightly as soon as the blossoms fade.

Bulbs that have bloomed should ripen for a few weeks before being dug up to make way for other plants.

All the hardy annuals can be transplanted from frame or flat by May 5th. The tender sorts had best be delayed a fortnight longer.

Until May 20th, perennials may be shifted and even shrubs and fruit bushes planted provided they are continually kept moist till well established.

Plant out carnations. Buy rooted chrysanthemum cuttings if you are not rooting your own.

### THIS MONTH'S MOTTO:

*Fight frost, wipe out weeds, obliterate bugs, destroy diseases, maintain moisture, stir the soil.*

## Gardening Discretion

THIS is the one time of year when the gardener should work slowly and cautiously.

Watch for clear, still nights, when the coldframes must be tightly closed and the transplanted seedlings carefully covered. Newly set lettuce should also be shaded during the hottest part of the day.

Unless you have individual frames, i. e., bottomless boxes a foot square with glass tops — your melons, squashes, etc., will be safer if not planted till about May 5th.

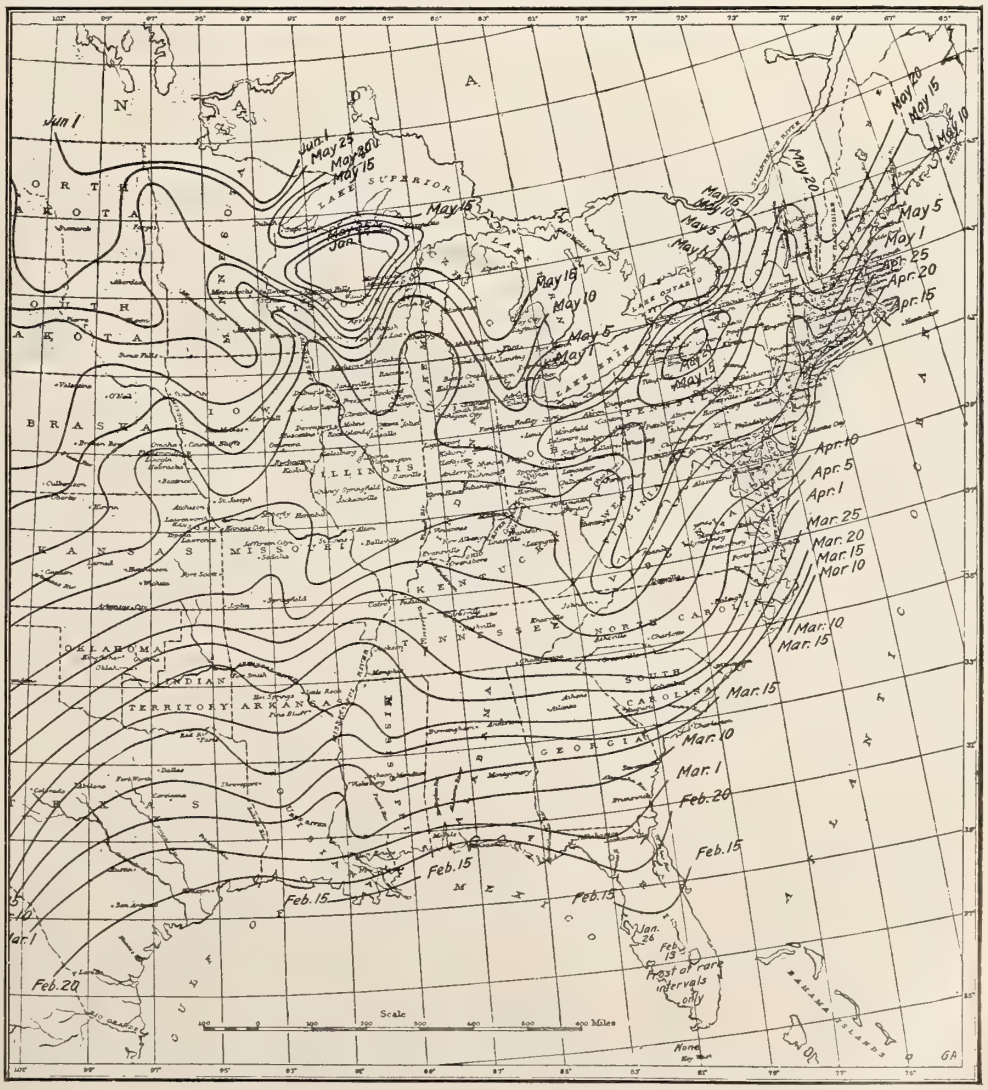
Cutworms are likely to break in and steal — or at least destroy — as soon as frost dangers lessen. Mix bran (a quart), Paris green (a teaspoonful) and water (enough to make a paste) and leave a little among newly set plants. Put a ring of the mixture around the base of the best fruit trees. Re-read the March GARDEN MAGAZINE for details.

Sow late celery, cabbage, kale, turnips, parsnips and potatoes about May 15th. But if you have time start some of the first three under glass now, using them to fill in cleared spinach or pea rows later on. Lettuce and radishes will temporarily fill up between rows.

Nip the blossoms off strawberry plants set last fall, and one year berry bushes. Don't cut a one-year asparagus bed at all. Dress it twice in May with salt, a pound to twenty square feet of ground.

A little nitrate of soda will help along the crops that are already up and doing. But in general and for corn and squash, especially, use plenty of manure. Keep it near the surface for the former, the roots feed only about four inches deep.

Blister beetles and aphides may bother the seedlings. Use kerosene emulsion.



The average date of the last killing frost in spring as observed for above 30 years is shown by this map. The lesson for the gardener is: Don't plant tender things too early

# Color Harmonies in the Spring Garden — By Mrs. Francis King, Michigan

NOW, WHEN THE SPRING BULBS ARE IN FLOWER, IS THE TIME TO STUDY THE NICETIES OF THEIR COLOR DISTINCTIONS — MAKE NOTES NOW FOR YOUR FALL ORDERS OF BULBS

IN THESE words, Spring Flowers, there is very music. There is a delicious harmony in all of Nature's colors, and particularly in the colors of all native spring flowers, as they appear with each other in their own environment. If any one doubts what I say, let him look at such pictures as are found in Flemwell's "Flowers of the Alpine Valleys," let him take up Mrs. Allingham's "Happy England"; or let him in May wander in the nearest woodlot and see a lovely tapestry of pale color woven of the pink of spring beauties, the delicate lavenders of hepatica, and the faint yellow of the dog tooth violet — thousands of tiny blooms crowding each other for space, but all very good.

Perhaps, next to the snowdrop, crocus is the earliest of the cultivated bulbs to bloom in our wintry region. The matter of color mixtures here comes to the fore. I admit this to be a question of personal taste; but it is one on which discussion should be agreeable and fruitful. It happens that I object to a mixture of colors in crocus, or, for that matter, in anything. Not long ago a well known landscape gardener, a woman, remarked that a border of mixed Darwin tulips was one of the most successful of her many plantings. In such a hand, this I am sure was so. If such planting were done exactly as it should be, with sufficient boldness, a sure knowledge of what was wanted, and great variety of colors and tones of those colors, the result would surely show a tapestry again thrown along the earth — a tapestry grander in conception and more glorious in kind than the one woven of the tiny blossoms mentioned above. But with the average gardener, a mixture so-called, is a thing of danger. What more hopeless than a timid one! "Be bold, be bold, but not too bold" — Shakespearean advice holds here.

To return to crocus. A while ago in the borders of this small Michigan place of ours, there was in one place a most lovely carpet of colonies of pale lavender crocus Maximilian, with grape hyacinth (*Muscari azureum*) running in and out in peninsulas, bays, and islands. Tall white crocus Reine Blanche, in large numbers, was near by, its translucent petals shining in the sun beyond its more delicately colored neighbors.

I believe I have before expatiated in these columns on the great beauty of *Crocus purpurea*, var. *grandiflora*, carpeting large spaces of bare ground beneath shrubbery, principally used in connection with great sheets of *Scilla Sibirica* which blooms so very little later than the crocus as to make the two practically simultaneous. These, in order to get a telling effect, should be planted by the thousands, and this, I beg to assure the reader, is a less serious financial observation than it sounds!

Hepatica that year bloomed with *Iris reticulata*. As an experiment I arranged the following spring some groups of this smart little iris, with hepatica plants threading their way among the grass-like leaves of the iris, and nearby a few hundreds of *Muscari azureum*. The cool delicate pinks of the hepatica were in most lovely accord with the rich violet of the iris, yet affording a striking contrast in form and a full octave apart in depth and height of tone. Is there a valid objection to thus using imported and native plants side by side? I know Ruskin would have hated it, but the great mid-Victorian man probably never had a

Rembrandt and Darwin tulips as they grow in their country of origin. The first-named next to the walk, are distinguished by absence of yellow chance to see the thing well done. You recall what he wrote of English flower gardens:

"A flower garden is an ugly thing, even when best managed; it is an assembly of unfortunate beings, pampered and bloated above their natural size; stewed and heated into diseased growth; corrupted by evil communication into speckled and inharmonious colors; torn from the soil which they loved, and of which they were the spirit and the glory, to glare away their term of tormented life among the mixed and incongruous essences of each other, in earth that they know not, and in air that is poison to them."

I should like to bring Mr. Ruskin back to life again, show him some color achievements in flower gardening in England and America to-day, and hear him say "A new order reigneth."

But, back to the crocus! Where drifts of *Crocus purpurea*, var. *grandiflora* were blooming under leafless Japanese quince, blooming quite by themselves, a fine show of color of the same order was had, really only a transition from one key to another, by flinging along the ground, planting where they fell, heavy bulbs of hyacinth Lord Derby. The full trusses of this superb flower made the most lovely companions for the just-about-to-fade crocus. How can I adequately describe the color of Lord Derby! Never, no never, in the words of one of the Dutch growers who calmly says, "Porcelain blue, back heavenly blue." May I venture to ask the reader what impression these words convey to him? To me they are as sounding brass and tinkling cymbals. They mean nothing. From my own observation of the hyacinth, I should say that its blue in the early stages of development has a certain iridescent quality which makes it uncommonly interesting, almost dazzling when seen beyond the green of the fresh grass of May; and in full bloom it shines out with a half-deep tone of purplish-blue. *Crocus purpurea*, var. *grandiflora* blooms with this hyacinth; the two tones of purple are distinct from each other and extremely interesting together.

Is, or is not Puschkinia little known? How distinct it is from most of the smaller spring things, and how lovely in itself with its tiny bluish white bells, pencilled with another deeper tone of blue. And so rewarding, coming up valiantly year after year, without encouragement of the compost or replanting! A little colony of it is here shown (page 238) very badly because rather too tightly planted. Puschkinia could be associated with *Iris reticulata* most beautifully; or its slender bluish bells would be delightful growing near *Tulip Kaufmanniana*. The bloom of all these bulbous things may be quite confidently expected at the same time.

Another illustration shows practically nothing but crowds of the fine white crocus Reine Blanche, grown as naturally as possible below *Pyrus Japonica*. Here they dwell calmly and seem to sleep year after year, except for the time when they show their shining faces to the sun of April. The most dreaded enemy of the crocus to my mind is a wet snow. The petals, once soaked and weighted, never recover their beautiful texture and when one fatal April, as my notebook shows, our hectic climate brought in one hour upon these charming but tender flowers rain, hail and snow, the wreckage may be left to the imagination of the tender-hearted.

Bulbs make an effective carpet under shrubs. Crocus Reine Blanche (white) growing beneath Japan quince

Nothing, to my thinking, can exceed for beauty the picture made by the majestic *Tulipa vitellina*, with its beautifully held cups of palest lemon color when supported by the lavender trusses of *Phlox divaricata* — and the stems of that in turn, almost hidden by the fine *Phlox subulata*, var. *lilacina*. Long reaches of these three flowers happily planted, or a tiny corner against shrubbery — it matters not one whit which — "and then my heart with pleasure fills!" What a wonderful thing to see below the glowing buds and blossoms of the Japanese quince clusters of tulip La Merveille or — but not *and* — tulip Couleur Cardinal. La Merveille, with its tremendously telling orange-red hues puts dash into the picture: Couleur Cardinal, sombreness, richness. No one could think for one moment of allowing these tulips to appear near each other. Crocus and early flowering things below and among the shrubs to bloom when the quince is leafless, tulips toward the grass, to show when tiny points of green and the red quince blossoms make a fiery mist above them.

The lucky householder or gardener who has sometime placed a group of the glorious shrub, Mahonia, on his ground, may like a planting which has seemed good to me against the shining dark green of its low branches. *Narcissus poetaz*, var. *Elvira*, to bloom with the lavender hyacinth Lord Derby or Holbein; with the gay tulip Vermilion Brilliant nearby, and some groups or colonies of tulip Couleur Cardinal associated with these. The fine Darwin tulip Fanny used with masses of *Phlox divaricata*

Tulips are best planted in large masses of individual varieties. For names of those shown here see text and *Phlox subulata*, var. *lilacina* below it, is a marvel of color. Mr. Hunt's description of Fanny I give: "Clear, rosy pink, with white centre marked blue. Not a large flower but one of exquisite color and form." I have never yet made a May pilgrimage to Montclair, but I know I should be a wiser gardener if I might, for Mr. Hunt's blooming tulips must be worth many a league's journey.

Nothing I have ever had upon our small place has given me more spring pleasure than the planting which I next describe. A shrub, two tulips, and a primula. The shrub was *Spiræa Thunbergii*, with its delicate white sprays of flowers. Below and among these spireas are the great tulip La Merveille, orange-scarlet, and the old double Count of Leicester, in tawny orange shades — and before the tulips lay low masses of the Munstead primrose. On this primrose which fares so well with me I have enlarged so often and so volubly that I fear the reader is weary of my praises. But to me it is an essential of the spring. With this primrose, with the hardy forget-me-nots, and arabis, the lemon-colored alyssum, the lavender creeping phloxes and with a charming low-growing thing whose name is *Lamium maculatum* (the gray-green leaves have a rather vague whitish marking upon them, and the flowers are of a soft mauve — grow tulip Wouvermann back of these, I beg!) — the most delightful effects may be had.

As for tulips again the loveliest of combinations under lilacs, or immediately before them, would surely ensue, if groups of tulips Fanny, Carl Becker, Giant and Konigin Emma were planted in such spots. And speaking of tulips — the ones just mentioned I got of the Dutch, the originators of the Darwin and Rembrandt tulips and who thereby have made all bulb-growers their eternal debtors. The photographs of tulips that accompany these notes show how exhibition beds may be made beautiful — they are pictures of the Haarlem (Holland) Jubilee Show in the spring of 1910. The Rembrandt tulip, whose characteristic from a color standpoint is that there is no yellow in its varieties, is a so-called flamed and feathered tulip, with almost the effect of stripes. In the picture on page 236 the first row, nearest the walk, is made up of groups of Rembrandts: the striped varieties in other parts of the border are also Rembrandts. All the others shown are new seedling Darwins, mostly unnamed. I like the arrangement here of the gay upstanding flowers against the numbers of dark little conifers.

The little Puschkinia, not often seen, has a flower of bluish white, lined with deeper blue

Tulipa Kaufmanniana, clear yellow, is a dainty flower to associate with Puschkinia

In the other tulip picture, page 237, the blackish group of tulips in the right hand middle distance is La Tulipe Noire — "the blackest of all the tulips." The circular group in the centre distance is Edmée, a bright cherry-rose color, also Darwin, and at the extreme left L'Ingénue, a fine white Darwin, slightly suffused with pale rose. In every case they are Rembrandts. It is rarely one sees such fine photographs of tulips, as are here shown, and they give the true tulip-lover a case of Dutch nostalgia. If the pictures bewitch one so, what must those flowers themselves have been!

I have a friend, what a friend, who visiting this very show at Haarlem bethought herself as she gazed of me, and of my penchant for these things. Instead of writing me some such platitude as "You should have seen the Darwin tulips," this discriminating and valuable person made notes on the spot of the varieties which seemed most good in her sight, and sent the list posthaste across sea and land to Michigan. "Many women have done excellently, but thou excellest them all."

Mr. Krelage gave last autumn to one of his English friends, a list of the Darwin tulips he considers the best. These are the ones: Clara Butt, salmon pink; Crepuscule, pinky lilac; Faust, deep violet; Giant, deep purplish crimson; La Candeur, ivory white; La Tristesse, slaty blue; Mme. Krelage, rosy pink; Margaret, soft pink almost blush; Mr. Farncombe Sanders, rosy crimson; Prince of the Netherlands, cerise carmine; Raphael, purplish violet; and Haarlem, a giant salmony orange-red. Five of these I have grown; the rest I hope to see as you are reading these lines. The man to whom this list was given, a distinguished judge of flowers, comments on the eivdent partiality of Mr. Krelage for the rich deep purples, as shown by these choices of his own.

Last spring Miss Jekyll wrote of her pleasure in some beautiful varieties of tulips Darwins and Cottage both, sent her as cut blooms by a well known grower. And I was so charmed with her description of these, especially with what she said of the purple and bronze tones of some of them, that I cleared out a lot of shrubbery to make room, and planted last fall the following groups: Ewbank and Morales together, Faust, Grande Monarque, Purple Perfection, and D. T. Fish. Bronze King, Bronze Queen, Golden Bronze, Dom Pedro, Louis XIV; Salmon Prince, Orange King, Panorama, Orange Globe and La Merveille.

I am not a collector; but, how readily, save for one reason, could I become one, in ten different directions in the world of flowers. Tulips should be one of my choices; narcissus another; no one could pass by the iris. The collecting of tulips is, I fancy, simple beside say that of daffodils. The varieties of the daffodil are so many, the classes not as yet quite clearly defined; while the tulip is simplicity itself, except when it comes to tulip species — there the botanist comes to the front and no unlearned ones need apply. Tulips are unfailing, certain to appear. No coaxing is necessary, nor do they require special positions. They may, for instance, grow among peonies; they are delightful, as was suggested some years ago by a writer in The Garden Magazine among grapes. While the narcissus may not flourish among peonies because of the amount of manure needed by the latter, tulips come gloriously forth. The question was put to me some time since by Mr. Miller, as to the probability of injury to or failure of narcissus when planted among peonies, on account of the amount of manure generally used among such roots, the statement made originally, I believe, by some English writer. May I give here the opinion of an English authority on daffodils in his own words?

"As to daffodils among peonies — well, if you don't get manure (new) among their roots, and only top dress with farm yard or stable manure, using bone meal underground, I think many daffodils would do very well: but you should try them from more places than one when you buy. Like humans and others, a rich diet coming on top of a long drawn out poor one upsets matters."

Crocus collecting, judging from what Mr. E. Augustus Bowles writes of it, must have charms indeed. I confess to the germ of the fever in the shape of several of Mr. Bowles's delightfully readable articles safely put away in a letter file. Each time I take these out to re-read them, I grow a little weaker: and by next July when fresh lists of crocus species lay their fatal hand upon me, I expect to be a crocus-bed-ridden invalid indeed!

# The Dwarf Tomato and the Small Garden—By Stephen N. Green, Ohio

GETTING THE MOST FROM THE GARDEN—SOME VERY GOOD REASONS WHY THE DWARF TYPE IS THE BETTER FOR THE HOME GARDEN—A COMPARISON OF ACTUAL YIELDS

Dwarf and ordinary tomato plants at transplanting time

THE most unruly member in the average garden is the tomato. Indeed young stocky plants set in rows beside beets, radishes and corn look fine for a time, but soon the tomato gets its roots into the rich soil and begins to "grow." Oh, yes, it grows! It falls over and blocks cultivation and is a tangle of vines extending four to six feet each way. Very few seem to have the patience to stake, tie and prune the vines. It takes time and skill and is not the most pleasant job to properly train the tomato and so it is usually a disgrace to the otherwise well kept garden. It is in the small home garden that the dwarf tomato shines.

The dwarf tomato is of very recent origin. The original plant is supposed to have been found as a "sport" in a field of vining tomatoes near Chateau de Laye, France, in 1862. From this one plant, by selection and crossing has descended all our present varieties of dwarfs. Quoting Prof. Bailey, "This curious race came suddenly, without premonition, and the same thing has not originated a second time."

The dwarf tomato listed by our seedsmen to-day may be divided into two groups, classed according to size of fruit, into "small" and "large" kinds. The former type may be represented by the old Dwarf Champion and the later by the Dwarf Stone or Giant Dwarf. These large fruited sorts (which will soon be catalogued in all colors and kinds of foliage) mark a new era for the dwarf tomato. The dwarf is now a rival to the old standard tomato. The small fruited sorts may well be classed as a curiosity for amateurs to experiment with, but the large fruited dwarf, equal in every respect in size and other good qualities of the tall tomato, makes it worthy of consideration by the up-to-date gardener. Then to, the dwarf has quite a number of points of excellence above the older kinds.

The cluster of fruits on the large fruited dwarf is full and compact

If you should ask the average gardener how to grow the dwarf tomato, his reply would doubtless be — "just like any other tomato." This is partly right; but this kind of an answer does not satisfy the careful gardener, because there is such an apparent difference in their growth, and this alone should make considerable difference in their cultivation and management.

The advantages of the dwarf plant are many, and more apparent as they are carefully studied. The moment the dwarf appears above the ground in the seed box, it attracts attention by its sturdy stocky growth. This growth allows closer planting of rows and longer standing in the seed box without injury. Dwarf plants are much easier to handle when transplanting; and again, in the transplanting bed, may be set closer and allowed to stand longer than is possible with tall varieties. This saving of space and allowing more latitude in season is very important to greenhousemen and there is less danger of injury to the plant from neglect that it usually receives from the small grower.

This attractive plant growth has created a special demand for the dwarfs, so that you can now find them on sale by the most progressive growers. I know of a gardener who grew nice potted dwarf plants and retailed them at 25 cents each, seemingly on the strength of their splendid appearance. The small grower will find a ready market for such a novelty and will be able to add considerably to his profits by its sale.

The dwarf plant fits perfectly into the scheme of the village or city garden or small farm, where space is valuable and rows are placed close together. The dwarf plants stand upright until heavily loaded with fruit while the standard tomato begins at once to vine and soon clogs up the narrow row and gives the garden an unsightly appearance unless considerable expense and labor is taken to train them up.

Even in the usual field culture the large fruited dwarf is being grown by some of the largest commercial growers and as soon as its special advantages are known its planting will, I am sure, become general. The dwarf plant carries better in transplanting, not wilting down so soon and its upright compact growth allows cultivation to be begun at once and extend longer than with the vining sorts.

On an average soil the dwarf plant can be planted as close as (if not closer, than) $2\frac{1}{2}$ x $3\frac{1}{2}$ feet where the usual distance of 4 x 4 feet is given the tall sorts, this allowing nearly double the number of plants to the acre, or a ratio of 8.73 to 16. This point of close planting is very important when growing dwarfs is considered. What this means in total yield is best shown in the following table which gives actual yield of the Dwarf Giant as compared to the average of six of the best tall kinds in a careful field test where every precaution was taken to insure accuracy.

| | Yield per plant | Plants per acre. | Yield per acre. |
|---|---|---|---|
| "Dwarf Giant" | 5.9 | 4978 | 585 bu. |
| Aver. 6 best tall varieties | 8.1 | 2722 | 440 bu. |
| Gain in total yield per acre in favor of Giant Dwarf | | | 145 bu. |

This plainly proves that the total yield of a plant may be less but the total yield from an acre can be greatly increased by the use of the large fruited dwarf tomato and no loss in size or appearance of fruit.

Close planting is the secret of success with dwarf tomatoes. The additional cost of plants and their setting is far overbalanced by the greater total yields. As land becomes higher prices the gardener must get greater returns.

In general the cultivation of the dwarf is the same in the field as the tall sorts. Thorough cultivation is one of the secrets

You can comfortably plant dwarf tomatoes in pots. Note the relatively large size of the fruit of successful tomato culture. Never allow a crust to form on the ground, but always maintain what is called the "dust mulch." Needless to say this is not obtained by two or three cultivations a season. Cultivation should follow every rain that lays the dust. Right here a good word may again be said in favor of the dwarf plant. Because of the "build" of the plant cultivation can begin as soon as transplanted and kept up much later than with the ordinary varieties and the upright plants allow much closer cultivation to the plant and both ways of the row so that weeds can be kept better in check and less expensive hand work required. The moisture is thus better maintained in the soil and with the tomato, soil moisture is an important factor. It has been said that "cultivation is manure" so the dwarf has the advantage in this respect.

However cultivation is not manure in the sense of adding more fertility to the soil, it only releases a part that would otherwise be unavailable. The gardener must apply manure and commercial fertilizers if the largest crops are to be expected. In raising dwarfs I have found a liberal application of nitrate of soda to be very profitable. This fertilizer should be used heavily only where the soil has received a heavy application of manure, or other food elements are found that will balance it. It can be sown broadcast near, but not on the plants at the rate of 200 to 400 pounds per acre, this amount to be applied in two or three different lots during the growing season of the plant. Nitrate of soda used in small gardens should not be applied in quantities of over an ounce per plant as excessive amounts are injurious.

Though individual dwarf plants yield less than individual tall ones, yet the yield to a given area is greater because you can plant nearly twice as many

This chemical is a very concentrated food and care should be taken in its use. If your soil is only of moderate fertility, be sure to balance the nitrate with the other food elements, or the results will be disastrous. Nitrate of soda seems to stimulate plant growth and bring fruit to earlier maturity.

Another point I have found of value in growing dwarfs is the practice of mulching the soil with manure or straw. This is applied at last cultivation and is always a good investment. The growth of the dwarf plant allows this at the proper season, thus another advantage over the tall sort. Mulching while adding fertility to the soil tends to keep the moisture in the soil at the time it is most needed and as the tomato is a shallow rooting plant this is most important. It also aids in keeping the fruit clean if the plant is not staked.

The dwarf is much easier to stake and train than the tall sorts. So much stake is not required and much less pruning, or tieing.

The convenience of picking the dwarf tomato is very marked. The fruit is bunched closer to the centre of the plant and quickly found. There is no hunting around in a tangle of vines to find a tomato and one has to cover less territory to pick a bushel.

Once in the basket you cannot tell the "dwarf" from the "tall"; unless over the average tomato it is firmer, better flavored and the fruits average better in size.

# Planting Retaining Walls—By Warren J. Chandler, Pennsylvania

## THE NEW IDEA IN WALL GARDENING—MAKING THE PLANTS COMFORTABLE BY CONSTRUCTING THE WALL WITH ROOT ROOM AND PROPER SOIL—PLANTS THAT MAY BE USED

SUCCESSFUL gardening consists not alone in one's ability to get plants to grow but also in converting surroundings into a harmonious whole by judicious selection of materials to fit the special locations. The accompanying photograph, showing how a most necessary retaining wall was made use of, illustrates this idea. Retaining walls are essential where steep grades are encountered, and the problem has been how to make them as attractive as possible by planting.

The simplest method is to plant at the base of the walls self-clinging vines like Boston or Japanese ivy (*Ampelopsis Veitchii*), Virginia creeper (*Ampelopsis quinquefolia*), English ivy (*Hedera Helix*), the evergreen *Euonymus radicans* and others of similar habit. A variant of this is seen in the planting of trailing plants at the top of the wall, allowing them to drape its face. These might include such things as Wichuraiana rose and its many hybrids, the snowberry, drooping golden bell (*Forsythia suspensa*), etc.

Though the effects from such plantings are good, yet they are not characteristic, merely repeating what is seen elsewhere, in quite different situations.

The opportunity is presented for a distinct type of garden effect by utilizing the actual face of the wall and planting directly on it, between the stones, specially selected plants. To get the best results from this scheme the plan should have been in mind at the time of constructing the wall, building it with a view to the plants' requirements.

Success depends on good soil and sufficient moisture. To secure these two essentials, the following suggestions will be found helpful: Build the wall slowly, setting the rocks carefully. Place the first layer a little below the level, and spread some good garden soil over it to the depth of three to four inches.

At this point, if plants are procurable, they should be planted at points where crevices will be formed when the next layer of rocks is set. To prevent the roots of these plants from becoming crushed by the rocks which are placed on top, place a couple of small stones on each side of the roots of each plant. Trail the roots back just so far as they will go so as to insure their firm hold of the soil, and prevent their unduly drying out. At the same time see that the rocks of each tier incline backward, thus directing the drainage to the rear of the wall and so conserving moisture.

In the setting of each layer, see that the surface of the wall recedes. This will avert toppling in the event of settling, which usually occurs.

The soil in the pockets should at all times extend back to that at the rear of the wall, or it will become too dry to support the plants. Actual connection with the supporting soil ensures a constant supply of at least some moisture.

Be careful in striving to satisfy the plants, needs that the wall is not weakened. The pockets where the plants are set should not be too large, and as there will be some settling the rocks must be selected with some intelligence, and again in placing them.

This method of construction and planting may not only be applied to retaining walls but is as practical for use in constructing steps leading up from rock gardens, sunken gardens, dells, etc.

The best side for a wall to be planted in this way is seldom a matter of control, but when we have a northeastern or northwestern exposure, or any intermediate point, we may count ourselves lucky as success is then assured. Some slight shade is also desirable. A specimen tree or two, of spreading character, will give protection to some of the shade-loving plants, which may be grouped at a point where they will enjoy the advantage.

The ultimate success of a wall garden depends on the selection of the plants used. It is impractical to consider any but those belonging to the rock garden group— plants which do not make a rank growth and require quantities of moisture and soil. Of such there is a large assortment from which to choose.

To classify them most satisfactorily a grouping according to color is best, as the periods of bloom are not extended over long seasons, the majority flowering in the spring and early summer. The following are among the most easily grown:

WHITE FLOWERS. — Early in April, almost before the snow has left us, the white moss pink (*Phlox subulata*, var. *alba*) is in full flower, making a carpet of pure white. At about the same time the rock cress (*Arabis albida*) and snow-in-summer (*Cerastium tomentosum*) are giving forth quantities of flowers of the snowiest white. These are both low-growing plants. The popular hardy candytuft (*Iberis sempervirens*) it is almost superfluous to name — everyone knows it.

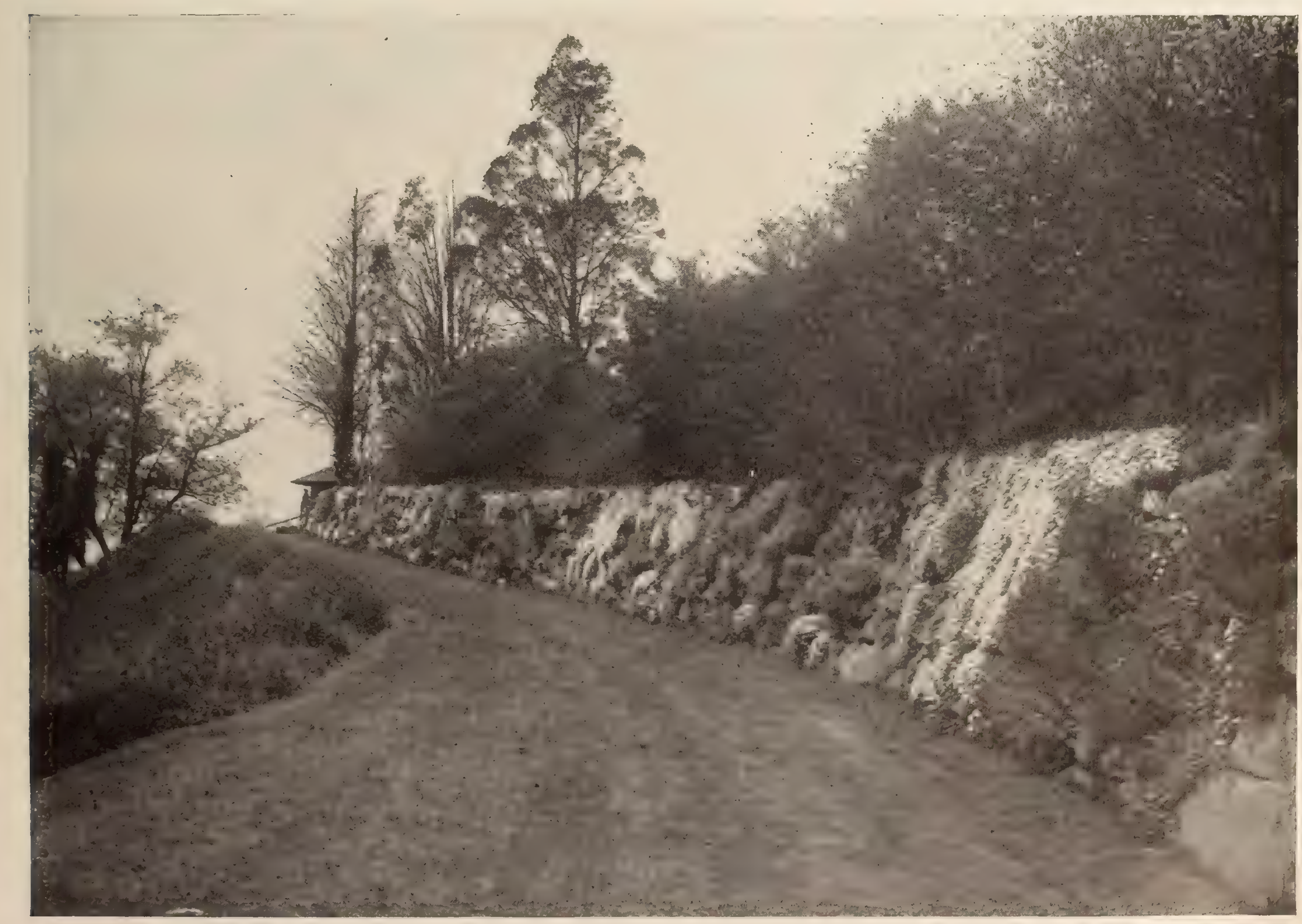
PINK AND RED FLOWERS. — Foremost in this color group comes the true moss pink (*Phlox subulata*). This is a splendid carpeting plant. Better get its improved variety rosea, however, because of its pure color and because of the multitude of others that run into sickly magenta-maroon.

Before this is to be seen, however, some of the saxifrages send up their brave cluster of fragrant pink flowers. Frequently the flowers open while the snow is yet on the ground.

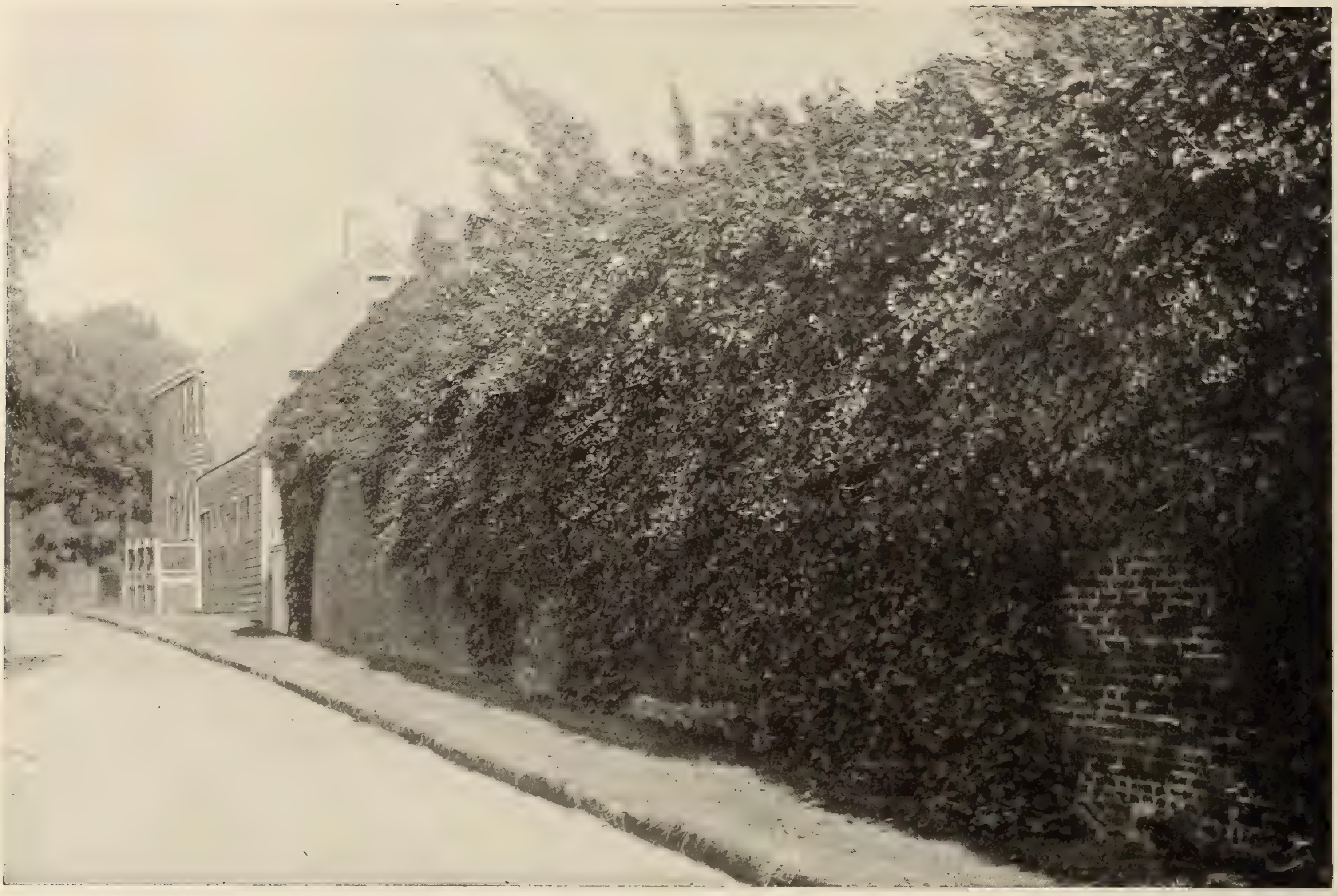
All the epimediums that flower in April and May are satisfactory, being dwarf in habit. They come in pink and white.

From June on until fall, the crown vetch (*Coronilla vera*) displays its lovely pink flower heads. It is at its best of course in June.

One almost wonders how the soapwort (*Saponaria ocymoides*) can bear so many



The new attractive way of treating a retaining wall. Build it with ample soil pockets and plant rockery-plants in the interstices



The way to treat an ordinary boundary wall, without soil to back it, is by vines to clamber over it. English ivy, growing in "tree" form when it clears the wall. At Nantucket, Mass.

flowers and yet continue to grow. The plant in July is almost smothered with its pink blossoms. It does not grow over six inches high.

*Heuchera sanguinea,* well named coral bells (which is better, by far, than the other popular name of alum root), has bright coral flowers borne on long stems resembling lilies-of-the-valley.

The livid red flowers of *Callirhoë involucrata* are larger than those of the usual rock plant and they continue from July until October, which alone makes it a desirable thing.

Yellow Flowers.—First to mind comes the English primrose (*Primula vulgaris*) with its pale sulphur yellow flowers in April and May and the attractive clump of pleasing foliage.

For bright effects the compact, hardy alyssum is quite useful. The Iceland poppies must not be forgotten. These come in white and yellow and bear their delicate flowers on graceful stems. All summer long they give forth a wealth of bloom.

Where most moisture is to be had plant the double buttercup (*Ranunculus acris,* var. *fl. pl.*) and not only have the benefit of the beautiful flowers but the glossy foliage as well.

Though you may not admire the cactus leaf, put in some plants of *Opuntia Rafinesquii* and the large bright yellow blossoms will repay you in their season.

The large-flowered evening primrose (*Oenothera Missouriensis*) must not be overlooked. The blossoms frequently measure three to four inches in diameter.

*Lotus corniculatus* will be a pleasure to many because of its wealth of globular flower heads. It blooms all summer and frequently into the fall and never gets much over six inches high.

Lastly in the yellows are the stonecrops — many of them — for details of which see The Garden Magazine for January, 1912.

Blue Flowers. — Blue flowers are not over plentiful and are really absent in the early part of the season. In June and July the dwarf blue aster (*Aster alpinus*) displays its large, showy flowers.

Though a little difficult to get established in exposed positions, the leadwort (*Ceratostigma plumbaginoides*) is well worth a trial, and its foliage alone is worth while.

The dwarf growing veronicas should not be overlooked, those which are especially worth being *V. rupestris,* flowering in May; *V. circaeoides* and *V. spicata,* var. *nana,* in June; and *V. candida* in June and July. The last named has silvery foliage.

Various Colors. — The columbines are true rock-loving plants and can be had in almost all colors. Of the most desirable, *Aquilegia chrysantha* is the best yellow; *A. cærulea,* blue; *A. vulgaris,* var. *alba,* and *A. flabellata,* var. *nana alba,* whites. Red with yellow centre is seen in *A. Canadensis.*

Many of the real dwarf irises are quite satisfactory for use.

*Teucrium Canadense* deserves to be planted for its beautiful foliage which is rich and glossy and almost evergreen.

If you are drawn to plants with history do not overlook the famous edelweiss of the Alps (*Gnaphalium leontopodium*). It will do almost anywhere among the rocks.

Ferns.—There is a rich lot of material here, for the more shaded portions of the wall. The tall-growing forms are available at the base of the wall, such as the cinnamon and ostrich ferns. In among the rocks may be planted the maidenhair, the brakes and the polypods.

One final word: look well to the condition of the plants for the first season. Make sure that they are getting the water they need; be on guard lest a drought strike before they gain a foothold.

It is always possible, indeed practical, to supplement the original planting by a sowing of seeds of some good rock plants the spring following. These will tend to find intervening crevices which are often impossible to plant at the time the wall is being built.

# Flowers for a Light, Dry Soil—By Gladys Hyatt Sinclair, Michigan

### THRIFTY, SHOWY FLOWERS THAT WILL GIVE THEIR BEST IN SANDY SOILS, WITHOUT EXTRA FEEDING, AND THAT DO NOT DEMAND CONSTANT ATTENTION — SOME THINGS YOU CAN SOW NOW

MANY women and children there are who love flowers and would willingly work for them, yet give up because their garden soil is poor and lacks water. To the ordinary garden rich soil and water are necessary. It is folly to try to grow roses and lilies, dahlias and chrysanthemums in light, dry sand. But there are a few plants that revel in just such a situation; and more that, while preferring easier circumstances, make an excellent best of what they can get in the way of food and water. Since perennial plants are so much fuller of comfort than annuals it is fortunate that the list of ask-but-littles holds twenty perennials to ten annuals.

To begin at the front of the border and the front of the season: among perennials that do not care to live high, rock cress (*Arabis alpina* is the earliest, coming into its white sheet of bloom just after the snow goes. It grows in spinster-neat tufts about six inches high and its little four-petalled blossoms are as welcome as the robins.

For edging paths, planting around pools or seats or bird baths where mowing is annoying, or for carpeting poor ground in shady places, use "myrtle," the periwinkle with clean, shining evergreen leaves and lavender blue flowers that come so early. In rich land this plant is apt to become a nuisance in time, as dwellers on old places in Maryland can testify. But it is a boon to the poor-soil garden.

If you want a silver leaved plant that will fend for itself and draw water from a desert use woolly leaved chickweed (*Cerastium tomentosum*). It is often misused in perennial carpet bedding but is really excellent to outline with where grass will not grow, edge a walk or bound a flower bed or border. It grows less than six inches high; and though its white, oxalis-like blossoms come later, it grows bright and pretty with the first warm days.

Doronicum is a taller April bloomer. Leopard's bane is an old name for it. Its long-petalled golden yellow "daisies" on eighteen inch stalks are beautiful massed in the garden or cut for the house. Daisy formed flowers are plentiful later, but they are few in early spring so these are especially valuable.

The prettiest carpet weaver of May is moss pink (*Phlox subulata*). It has improved much in the hybridizer's hands. The old magenta has given place to a really delicate pink variety, *rosea*. It creeps close to the ground and blankets itself with bloom in early spring after the hardy, dainty fashion of the old sort.

Two worthy white varieties are alba and Nelsoni. Just back of this should grow the clove pinks. They flourish in light soil, making beautiful gray foliage all summer and spicy blossoms that last well into June. The improved sorts from seedsmen are lovely and fragrant but if one wants the true old clove pinks of grandmother's days it is best to get a few roots or a handful of seed from some old garden.

Behind pinks in the garden of May plant German iris. It will do well in sand. There are many varieties in blue, white and yellow, all beautifully marked. They stay in bloom all through the month and ask but little, though grateful for the suds on wash day in blooming time. To make a fine show they should be set in clumps. Back of these or among them set lupines. They are lilac-blue, and planted in masses are more effective in May than many things more pretentious. Sturdy, free-blooming and showy, they are well worth planting where food and water are scarce.

Sweet rockets make good in the garden of limited resources. Their sizable heads of white or lavender flowers stretch up in showy groups, last a long time and are valuable because they will bloom in shade as well as sun. Another May bloomer that asks little and gives much is valerian — the old sort with large pinkish white heads of tiny flowers that will perfume a whole house. It grows three feet high and I have seen it hold its own behind German iris and bloom in utter neglect for years. Cultivated and given room, it increases rapidly.

If there is a gravelly place where nothing else that is pretty will grow, a hot bank that refuses to entertain aught but sand burrs, plant bishop's weed (Ægopodium). Its green and cream, three-partite leaves as large as those of a maple grow six inches high and completely cover the ground. It makes pretty edgings too, but must be strictly disciplined to keep it within bounds. This little plant is, in a way, quite curious and interesting. It seems to be hardly known nowadays, and is spoken of but in few books or catalogues. Yet it is in all really old-time gardens and seems to carry the atmosphere of the Colonial with it. Perhaps its variegations in these days of pure taste have rung its knell.

The wild cucumber will quickly cover a fence or trellis and flowers freely in summer

Thrift (Armeria) is a June blooming edger that will grow in poor soil as well as in rich, and is very pretty. Its prim evergreen tufts make a good defence against grass and its bunches of pink or white flowers, something like single geranium blossoms come, off and on, from June to September. Sweet Williams are favorites in the June garden and make a fine display if good colors are chosen and thickly set. The rich reds, clear whites and red-and-whites are especially good.

Beside them grow Shasta daisies. Don't be afraid of the name — not only are they three times as large as their grandmothers of the field, but they have developed home keeping traits, that must astonish their relatives. About of the same height is a June blooming soapwort that does well in sandy gardens, *Saponaria officinalis* or bouncing Bet. Don't judge it by the scraggy wild specimens you see competing with burdock and June grass. It responds wonderfully to room and cultivation and the double form is as beautiful as the choicest stocks.

Two of our annuals join the procession in June — nasturtiums and California poppies. Nasturtiums will give more flowers in poor soil than elsewhere and they run to leaves when watered too freely. They are excellent for children's gardens; the little ones like to pick their flowers. An edging of dwarf nasturtiums sown of two colors, say bright red and cream, is much finer than a mixture. Plant six inches apart early in May.

For a low-growing, self-sowing, cheer-bringing riot of yellow and white, sow California poppies. Their finely cut gray leaves are beautiful, their flowers are limitless if seed pods are picked and the blossoms are lovely in bowls, opening morning after morning. Like all the poppy family they are very hard to transplant successfully, and should be sown early.

July brings the true poppies in gorgeous array to the garden of limits. Poppies are short of season; three weeks see their coming and going; but they are brilliant weeks, and anything in annuals prettier or daintier than a bed of Shirley poppies is yet to be found. Scattering seed among perennial

German iris will flower year after year with ever so little encouragement

Plant Shirley poppies in mixture for light colors. They are not easily transplanted

Adam's needle (Yucca) thrives on dry, hot soils. It is essentially a desert plant

plants is a good way to have poppies with no bare spaces afterward; or the pink and white ones can be grown with blue cornflowers (bachelor's buttons). The cornflowers go on blooming until cold weather. Sow poppies and cornflowers as thinly as possible, just as early as the ground can be worked.

Among annual vines for poor soil, morning glories and wild cucumber (*Echinocystis lobata*) are the best. They will grow anywhere, anyhow, and furnish shade or a pretty screen by the Fourth of July. Both do better if sown in the fall.

In front of poppies sow godetias. They are of poppy-like bloom, satiny of texture, in reds, pinks and whites. They make bushy little plants about a foot high and do best in poor soil, beginning in July to bloom all summer. Beside these, annual pinks are really charming things to grow; so generous of bloom. Sown in April or May, they bloom from early July till snow and often live over winter.

Portulaca is the ground cover to bloom from July till frost and one of the best annuals for garden color. Refusing to grow in rich soil, it will riot over the hottest, driest, sandiest spot in a blaze of yellow, white, red and pink; its single and double rose-like flowers closing their petals at night but laughing open again to meet the sun. Portulaca should be sown late in May when the ground is thoroughly warm, where it is to bloom as it does not like transplanting. Early sowing in cold ground only wastes the seed.

Of perennial plants for this month, hardy coreopsis should be grown behind perennial gaillardias. Both are open yellow flowers on the daisy order, the gaillardias marked with maroon. The petals are broad and notched and the flowers very showy. Both are hardy foragers, content with little. The gaillardias will go on blooming till snow.

July brings the yucca's bloom to the sterile garden and no more stately thing blooms anywhere. Its spiky, tropical, evergreen leaves are decorative the year round and its four-foot candelabra-stalks of waxy creamy bells like miniature magnolia blooms are magically beautiful.

Pardanthus, called blackberry lily because its seeds look like blackberries, is showy in July and August. Like most of the plants mentioned here, it can be easily raised from seed which can be sown as soon as ripe or in early spring.

August will find pinks, portulaca, armeria, California poppies, gaillardias, nasturtiums and godetias at their best in the garden of not-much-riches, and will add annual chrysanthemums.

Hardy asters bloom lavishly in September and October, growing from eighteen inches to six feet high, according to kind. They succeed in any soil. White, all shades of lavender and purple and many blues are represented in named varieties and it cannot be denied that very late flowers are as much treasured as very early ones.

Hardy asters are best planted with goldenrod against fences or buildings at the very back of a border. If set thickly, they make an October show that surprises every one and furnishes flowers for decorations by the armful.

# A New Way of Beautifying Large Buildings — By Wilhelm Miller, New York

PLANT SHRUBBERY NEAR THE WALL, NOT AGAINST IT — EASIER TO HANDLE COAL, PAINTING, WINDOWS, AND SNOW, GIVES LIGHT TO THE BASEMENT, PREVENTS DAMPNESS, AND LOOKS BETTER

THE old way of beautifying large buildings, such as schools and factories, is to plant shrubbery *against* the walls. The up-to-date method is to plant the shrubs *away* from the walls. The new idea was worked out by Mr. Harlan P. Kelsey, landscape architect, for a state normal school at Salem, Mass.

The practical advantages claimed for the new plan are that coal, painting, windows, and snow are easier to handle, the basement gets more light and air, dampness is prevented; and areas are more easily kept clean and sanitary.

It is important to be able to get close to large buildings with wagons, and the new method provides a wide space, shown in Fig. 1, which may save the expense of bringing in coal by hand. Driveways are usually eyesores, yet one like this can be hidden almost completely from the sidewalk. Piping and conduits entering and leaving the building are usually difficult to locate when overgrown with plants and even more difficult to open and repair properly. Everyone who uses a garden hose will appreciate what it means to be able to reach the sill-cocks with ease and do the watering from the inside.

In the case of wooden buildings the new method has decided advantages, for wood has to be repainted at frequent intervals, and expense is reduced if the painters do not have to clamber over and around bushes. Moreover, shrubs planted directly against a frame building tend to make a house rather damp, especially on the north and west sides, because shrubbery holds moisture after a rain longer than bare, well drained soil and sometimes prevents adequate ventilation of basements. For the health of patients it is important that hospitals should be dry and airy about the foundations — not damp and close. Again, wood tends to decay, when subject to freezing and thawing, especially when wet. Shrubs planted next to a wall catch the drip and hold their wetness directly against the wood.

The snow problem becomes more important the farther north one goes, and even in the Middle States, it is sometimes necessary to pitch heavy loads off the roof. Under the old arrangement, the snow falls on the sidewalk and has to be handled again, or it falls on the shrubbery and breaks the bushes. By the new arrangement, the snow falls on a grassy space, where it may usually be left without rehandling or without flooding the cellar when it melts.

Now, let us consider beauty. The object of planting shrubbery against a wall is to make a transition between architecture and nature. The essence of the problem is to hide the right angle made by wall and lawn. This angle and the straight foundation line are, somehow, two of the ugliest facts with which a landscape designer has to deal. Now, if you plant your shrubbery ten feet away from the wall, it serves to connect architecture and nature quite as well as by the old method, as you can see by Fig. 3, which shows the effect from the sidewalk. Notice how the shrubbery blends with the vines. The new idea does not do away with vines on the wall, for they are often more important than trees in hiding ugliness and connecting the building with the landscape.

Indeed, the new arrangement looks better than the old, because the shrubbery beds seem wider than they did before. Look at the shrubbery masses and you get the impression of a border twelve to sixteen feet wide, yet the border may be only six feet wide. Here again is a saving of plants, top soil, manure and labor if you can get the depth and richness of a sixteen-foot border by planting only six feet.

Moreover, the new arrangement adds a garden to the grounds without additional cost. For example, consider the row of lilacs in Fig. 1. Teachers and scholars now have a lilac walk, which is far prettier than if the same number of lilacs were crowded against the wall. Both sides of the bushes can now be seen, instead of one. And, instead of a hard, narrow, artificial path, there is a broad, pleasant, nature-like strip of lawn to walk upon. Imagine, how beautiful it must be when the lilacs are in bloom!

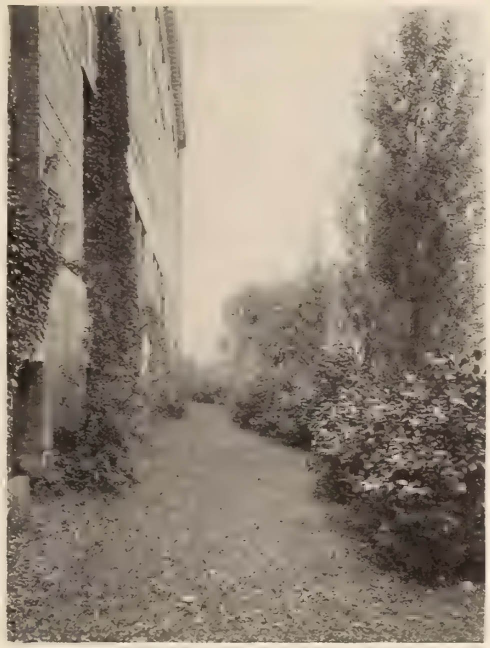


Fig. 1. The new way of beautifying large buildings by planting shrubbery away from the wall instead of against it. Lilacs at right. *Ampelopsis Engelmanni* on walls. *Forsythia intermedia* at left. From the street these lilacs look as if they were planted against the wall

Important as these improvements are they suggest something else far more important, viz., every large building ought to have a comprehensive plan of its outdoor surroundings made by a first-class landscape architect. It is the only way to provide for every convenience and to harmonize every outdoor feature.

For example, the biggest fact about a big building, as a rule, is that it makes a frightful discord with the landscape. Take this school building in Salem for example. I dare say it is all that a school should be as to architecture and management, and probably the people of Salem swell with honest pride whenever they see its huge bulk, but to me it is a big yellow blotch on the landscape. The reason why big new buildings look painfully crude and raw is that they make a violent contrast with their environment. The first thing to do is plant vines, because vines will grow high more quickly than trees. Moreover, even mature trees can only hide ugliness, while vines have the power of transmuting ugliness into beauty. The chief vine on this building is Englemann's creeper (*Ampelopsis Engelmanni*), which was introduced to cultivation by Mr. Kelsey. This grows more quickly than the common Virginia creeper (*A. quinquefolia*) and is showier in autumn because the foliage turns scarlet instead of claret. And notice particularly that it is a perfect "clinger" to smooth brick, stone or concrete surfaces while its prototype the Virginia creeper has undeveloped discs which are too weak to support the vine in this manner.

The truth is that the only right way to finance a large building is to allow about ten per cent. of the total cost for outdoor features. Then, before you choose the architect or buy your land, call in your landscape architect because his judgment on sites and finances is invaluable. Then you may have ground enough to give a building dignity; convenient drives and walks, instead of meaningless serpentine

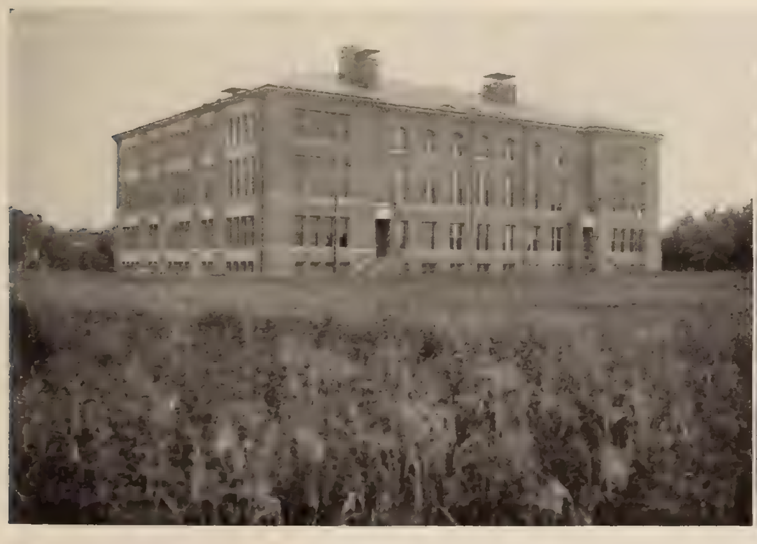


Fig. 2. Before planting, showing what violence every large new building, no matter how good, does to the landscape until trees, vines and shrubs are planted in such a way as to connect architecture and nature

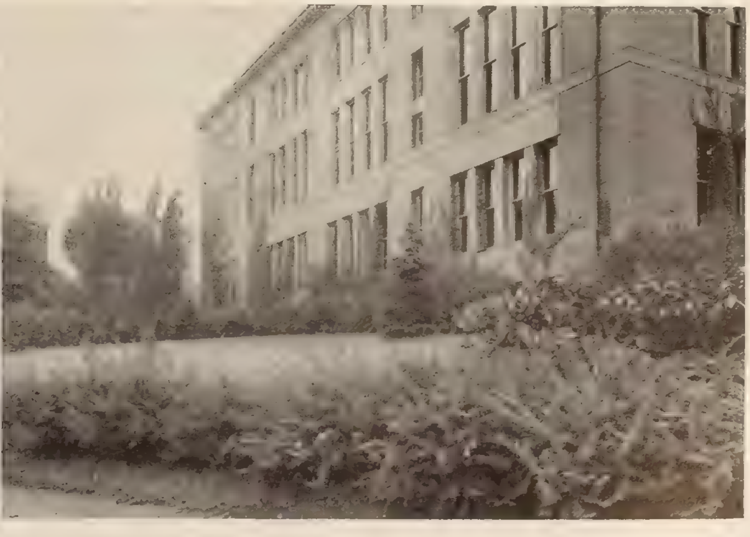


Fig. 3. View from the street, showing how the shrubbery seems to be planted against the wall. In reality there is a wide, grassy passageway which admits light and air to the basement windows and gives the children a pleasant garden walk

curves; and a place of beauty which children will love all their lives and which will eventually make our coming citizens as loyal to primary, secondary and vocational schools as they now are to colleges. And is not this principle just as important with respect to its effect on inmates of hospitals, asylums and even corrective institutions? Then you will have money enough to buy top soil and manure enough to make trees and shrubs grow happily instead of sulking. All honor to the men who gave Mr. Kelsey the opportunity to create these beautiful grounds, because they have done so much better than most school boards, yet how much better everything could have been done, if planned from the beginning, instead of being an afterthought, because the funds are then totally inadequate!

There is nothing new about screening unsightly objects. Every landscape architect will try to do that every time. But it is very pleasant to see on the borders of these grounds a lusty plantation of poplars, willows, locusts, sumachs and Hercules' club. And it is better still to see these quick, cheap plants used as nurses for nobler and longer-lived, but slower-growing trees, such as pines, oaks, and thorn apples.

The "turn around" is a problem which is not satisfactorily solved once in a thousand times. Flowers and bedding plants are too trivial. Trees are usually objectionable when they hide the curve because a horse thinks he is going into a blind alley and gets frightened. Fig. 4 shows one of the best turn arounds I have ever seen. It has mass enough to support the building, and is interesting the year round. The bulk of the planting is evergreen, the centre being composed of *Rhododendron maximum* and *Catawbiense*. There are a few hybrid rhododendrons in front of these to give variety of color. *Azalea Vaseyi* and *arborescens* have the advantage of this evergreen background. The bed is edged with yellow-root (*Xanthorrhiza apiifolia*) to keep the children out. The fillers are tall yellow iris (*Iris Pseudacorus*) and lilies (*Lilium superbum*, *Canadense*, and *speciosum*).

I am sure that Mr. Kelsey loves children, because he has provided a note of welcome for them when school begins. It is not practical to have a lot of flowers in the school yard in September, as a rule. Some faithful teachers inspire their children to raise flowers around the base of the building, but that is no place for flowers. Drip is bad enough, but the main reason is that flowers cannot hide the foundation line and they are too small to give any support to a large building. Shrubbery is more dignified, costs less to maintain, and the bushes with attractive berries will provide enough of color in autumn and winter to give that note of cheery welcome which every schoolyard in the land should radiate. Photography cannot show these berries well. Fig. 5, indicates only one of many shrubs with brightly colored fruits — the snowberry. When I saw this school in September, attractive bits of color were furnished by such berries as these:

*Aronia arbutifolia*, scarlet.

*Aronia nigra*, black.

Japanese dogwood (*Berberis Thunbergii*), red.

Dutch honeysuckle (*Lonicera Belgica*), red.

Snowberry (*Symphoricarpos racemosus*), white.

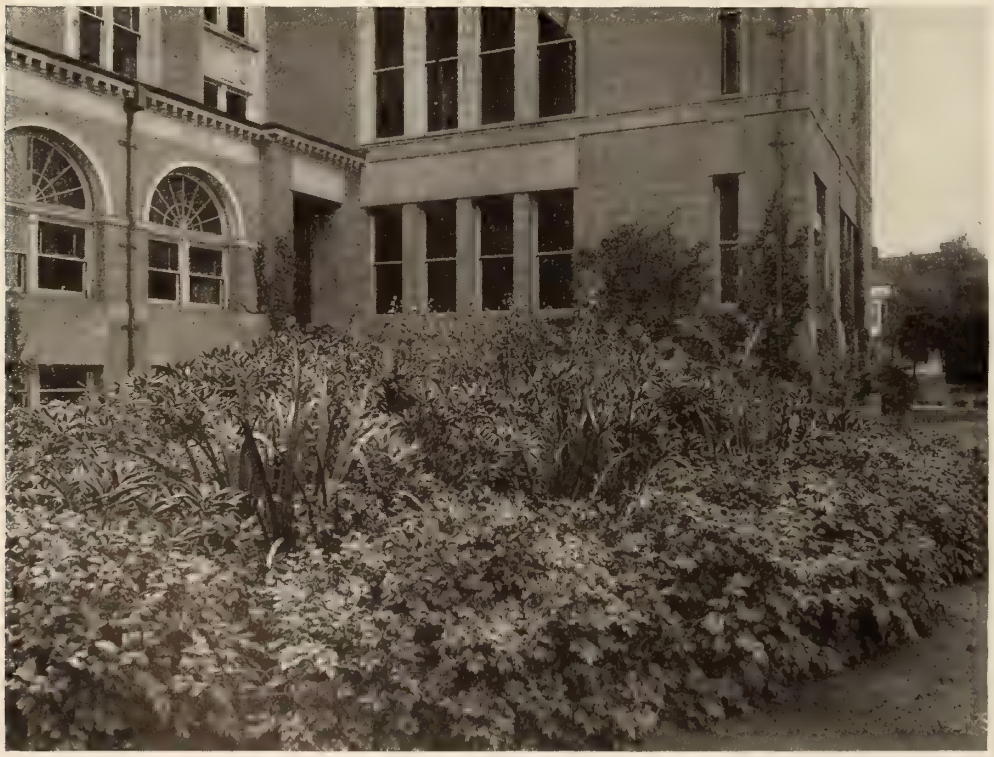


Fig. 4. A better turn-around than flowers or trees. Rhododendrons and azaleas edged with yellow root, with lilies and irises as fillers. Attractive the year round and helps "support" the building

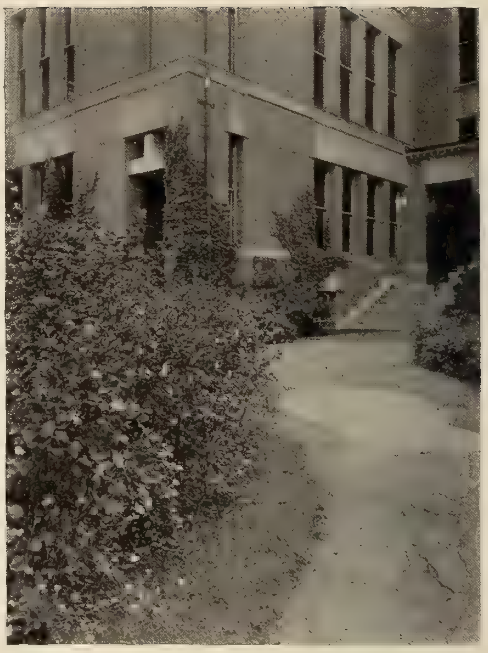


Fig. 5. A note of welcome when school begins is given by shrubs with brightly colored berries, e. g., snowberry (*Symphoricarpos racemosus*)

Highbush cranberry (*Viburnum Opulus*), red.

Arrow-wood (*V. dentatum*), blue.

Wrinkled rose (*Rosa rugosa*), red.

Winterberry (*Ilex verticillata*), scarlet.

Regel's privet (*Ligustrum Ibota*, var. *Regelianum*), blue.

Panicled dogwood (*Cornus paniculata*), white.

Rhodotypus (*Rhodotypos kerrioides*), brown.

In addition to these I noticed a double row of *Viburnum tomentosum*, which is designed to make almost a covered walk. This bush has showy white flowers in May, followed in September by interesting red berries that turn black.

Mr. Kelsey is not entirely opposed to using shrubs against buildings. Indeed, he uses *Forsythia intermedia* as a feature on the walls of this school, planting entirely around the building between basement windows and areas. Of course, yellow flowers would not show well against a yellow building and therefore he provided an evergreen background by the free use of *Euonymus radicans*, a vine which is hardier than English ivy and bears red berries that last all winter. *Forsythia intermedia* is one of the best plants to plant against a wall because it takes as little room as a vine and has both upright and arching lines, the former harmonizing with architecture, while the latter bend over to meet the grass. The marvellous shower of golden bells in early April from such a liberal planting of Forsythia makes a warm good-bye to vigorous winter and a joyous promise and welcome of spring.

It takes an expert to harmonize all the necessary and beautiful outdoor features. A school board cannot do it. It pays to have a first-class landscape gardener, for it is the only satisfactory way, and in the end it is the cheapest.

# Be Your Own Plant Doctor—By H. H. Whetzel, Plant Pathologist, Cornell University

### A NEW KIND OF TABLE, DESIGNED TO HELP THE AMATEUR TO RECOGNIZE THE COMMONER DISEASES AFFECTING HIS PLANTS, SO THAT HE MAY APPLY THE PROPER REMEDY PROMPTLY

[EDITORS' NOTE.—*The following tables are unique. Nothing of the kind has yet been put before the gardener in such an easily understood way. Most tables, or "spray calendars," assume an acquaintance with what may be causing the trouble or disease. In the present case the remedy is arrived at by working from the known to the unknown. First of all the plant is given, then the gross apparent character of the trouble, the time of observation, and the general description of the cause; and from these the name of the disease is arrived at. The remaining columns tell of the immediate remedies and general preventive measures. A synopsis of remedies and their modes of preparation follow the tables. A similar table, prepared by Dr. E. P. Felt, and covering the insects, was given in* THE GARDEN MAGAZINE *for May*, 1909, *page* 221.]

PRACTICALLY every plant is injured more or less by parasitic fungi, but not in every case is the resulting loss sufficient to warrant the expenditure of time and money for its prevention. For this reason the following tables are not absolutely comprehensive, and it is probable that the grower will notice on his plants lesions of a type not described in them. However, there will be little loss and no cause for alarm in most of these cases. The tables treat of all the important diseases of the plants listed, and the control measures recommended are in every case those which have in actual practice proven most efficient and at the same time least troublesome and expensive. For lack of space in the column labeled "control measures" very little detail could be given, but the full data is given on page 256.

It is one thing to know what fungicide to use, and another to know just how to make and exactly when and how to apply it. The tables will supply the first. Fungicides, more often than insecticides, are used primarily to *prevent injury, rather than to cure* that which has already taken place. In other words the fungicide serves as a protecting armor to the plant.

In many cases after the fungus once gains entrance to the host it is too late and absolutely useless to spray. However, in a few cases this is not true. The powdery mildews of roses, hops, lilac, cherry, etc., live for the most part on the outer surface of the leaves and can be entirely destroyed (even after they have attached themselves) by spraying with potassium sulphide or dusting with sulphur.

Not all methods of disease control have to do with spraying. Pruning out of diseased parts, seed treatment, soil sterilization, crop rotation, application of various substances to soil, drainage, complete eradication of alternating host plants, destruction of insects carrying disease germs, etc., are some of the other remedies.

In the above tables no superfluous precautions are suggested and the grower will find it necessary to follow the directions closely if he hopes to get good results. In many cases the delaying of the application of a spray for a day will render it wholly useless. For this reason the implements for spraying should be always in condition for use, and the application of a spray on short notice should be possible. No grower who hopes to obtain clean crops should fail to have in readiness the means for combatting the many fungus foes which are sure to assail his crops.

The owner of the small garden and most amateurs to whom gardening is merely a relaxation and a side issue, will find it much to their advantage to rely upon the ready prepared articles which are especially manufactured for their needs.

These proprietary articles are made from definite formulas and although they may be, in some cases, somewhat less efficient, volume per volume, than the freshly prepared article, still their convenience and their known efficiency justify their use. In some cases, particularly with some of the tobacco extract preparations and other contact poisons that are used for insects, the ready prepared commercial article will be found distinctly superior to the home-made.

## DISEASES OF VEGETABLES

| PLANT | SYMPTOMS | TIME | DISEASE | CONTROL MEASURES | REMARKS |
|---|---|---|---|---|---|
| **Asparagus** | Reddish or black pustules on stem and branches | Summer and autumn | Rust | Spray with bordeaux 5–5–50, containing a sticker of resin-sal soda soap, once or twice a week all season | Fertilize and cultivate thoroughly. During cutting season permit no plants to mature along road way, etc. |
| **Bean** | Circular, brown or purplish spots on pods, stems and leaves | Summer | Anthracnose | Plant clean seed obtained by sorting for absolutely clean pods. Spray with bordeaux 5–5–50 | Spray when plants first appear, when first pair of leaves are expanded and when pods have set. |
| **Bean** | Large dead spots on leaves. Watery spots on pods | Summer | Blight (bacterial) | Spray with bordeaux as for anthracnose | Difficult to control. |
| **Bean** | Rusty spots on leaves | Summer and autumn | Rust | Burn old leaves and vines each year | Plant resistant varieties. |
| **Bean** | White moldy growth on pods and at base of stem | Summer | Root and stem-rot | Good drainage, liming of soil. In greenhouse sterilization of soil with formation | Not of sufficient importance to warrant soil treatment in the field. |
| **Beet** | Circular spots on leaves, with gray centre and purple border. | Summer and autumn | Leaf-spot | Spray early with bordeaux 5–5–50. Afterward every ten days | Most important disease of the beet. |
| **Beet** | Base of leaves black, root rotted and cracked at crown | Summer and autumn | Root-rot | Good drainage and liming of soil recommended. | No satisfactory treatment. |
| **Beet** | Warty and scabby spots on roots | Summer and autumn | Scab | Practice crop rotation | No treatment effective. |
| **Cabbage and cauliflower** | Leaves yellow, then black on margin, later fall off. Heads not formed | Early part of season up to maturity | Black-rot (bacterial) | Treat seed in mercuric bichloride 1–1000 for 15 min | Plant on clean soil, practice crop rotation. |
| **Cabbage and cauliflower** | Plants stunted and unhealthy looking, roots much deformed. | From seed bed to time of maturing. | Club-root | Plant only healthy plants, use no manure containing cabbage refuse. Practice crop rotation. Avoid clubbed plants for transplanting | If necessary to use infected land apply lime 2–5 tons to acre previous fall or earlier. |
| **Celery** | Yellowish spotted leaves. Often in seed beds | Early summer | Early blight | Spray with ammoniacal copper carbonate 6–3–45, make about eight applications, begin when plants are in seed bed | Destroy diseased plants and refuse. Spray often enough to keep new growth covered. |
| **Celery** | Yellowish, spotted leaves. Often in storage | Late summer | Late-blight | Spray as for early blight, but continue to harvesting time | Have good drainage. |
| **Cucumber** | Yellow leaves later drying up. | About fruiting time | Downy mildew ("the blight") | Spray with bordeaux 5–5–50, every two weeks from time plants begin to run | Burn diseased plants in fall. |

## Diseases of Vegetables — *Continued*

| PLANT | SYMPTOMS | TIME | DISEASE | CONTROL MEASURES | REMARKS |
|---|---|---|---|---|---|
| Cucumber | Plants wilt down rapidly | Throughout growing season | Wilt (bacterial) | Destroy striped cucumber beetles, or spray with bordeaux 5–5–50, to drive beetles out. | Gather and burn all wilted leaves and vines at once. |
| Lettuce | Sudden wilting of plants, especially in greenhouses | Throughout growing season | Drop | Steam sterilize soil to depth of two inches or more. | If sterilization not feasible, use clean soil. |
| Onion | Wilted plants, gray mildew on leaves. | When plants are half grown to time of maturity | Mildew | Spray with bordeaux 5–5–50, begin when plants show three leaves. | Repeat spraying every ten days. Add sticker to spray. |
| Onion | Black pustules on leaves and bulbs. | Throughout season | Smut | Practice crop rotation. Drill into rows when planting seed, sulphur and lime, equal parts or formalin solution. | Onions from sets planted in clean soil rarely suffer. |
| Potato | Scabby tubers. | During growing season | Scab | Treat tubers before cutting in formalin solution, 1 pt. to 30 gal. water for 2 hours. | Plant in clean soil. Avoid for several years diseased land. Do not lime potato land. |
| Potato | Leaves spotted and blackened. Tubers show dry rot | About blooming time Aug. and Sept. | Late blight | Spray with bordeaux 5–5–50. Begin when plants are six inches high and repeat every ten days. Use clean tubers. | Make about seven applications. |
| Potato | Small brown spots showing concentric rings on leaves. | Throughout season | Early blight | Spray as for late blight. | Plant resistant varieties. |
| Potato | Falling over and wilting of tops. Tubers show brown ring at cutting across stem end. | Throughout season | Dry-rot | Select seed which shows no brown ring, treat as for scab and plant in clean soil. | Burn all diseased and discarded tubers. |
| Tomato | Numerous minute angular spots on leaves. | About midsummer | Leaf-spot | Spray with bordeaux 5–5–50 every week or ten days from time plants are set out. | Stake and tie up When setting out seedlings pinch off lower leaves. |
| Turnip | Plants stunted and unhealthy, the roots much deformed. | During season | Club root | Same as for club root of cabbage above. | Application of lime several years ahead of planting best. |
| Turnip | Soft slimy rot of root. | In autumn | Soft-rot (bacterial) | Plant resistant varieties; practice crop rotation. | White turnip more susceptible than yellow. |
| Sweet potato | In seedlings black spots on roots and stems. Badly rotted old roots. | Growing season. | Black-rot | Practice rotation of crops. Avoid diseased roots as seed. | Have dry conditions in storage. |
| Squash | Plants wilting down rapidly. | Growing season | Wilt (bacterial) | Spray with bordeaux 5–5–50, to drive away insects on vines. | Gather and burn all wilted leaves and vines at once. |
| Squash | Yellow leaves, later drying up. | Summer | Downy mildew | Spray as for downy mildew of cucumbers. | Destroy all dead plant parts in fall. |

## Diseases of Small Fruits

| PLANT | SYMPTOMS | TIME | DISEASE | CONTROL MEASURES | REMARKS |
|---|---|---|---|---|---|
| Cranberry | Numerous red galls on surface of plant. | Spring and summer | Scald | Withhold water from plants during winter. | |
| Currant | Leaves spotted, turn yellow and fall. | Late spring and summer | Anthracnose | Spray 3–5 times with bordeaux mixture 5–5–50. Beginning as soon as leaves appear. | If currant worms present add paris green, 1 lb. to 100 gals., or arsenate of lead, 2 lbs. to 50 gals. |
| Currant | Leaves spotted, spots lighter color in centre. | Late spring and summer | Leaf blight | Spray with ammoniacal copper carbonate until fruit is harvested. | Afterward use bordeaux 5–5–50. |
| Currant | Leaves rusted on under side. | Summer | Rust | Destroy currant leaves and neighboring white pine. | Disease not yet common in this country. |
| Currant | Canes showing dead and discolored areas. | Summer | Cane-blight | Begin when plants are small, and cut out and burn all diseased canes. | Go over plantation three or four times every summer. |
| Gooseberry | Fruit and leaves covered with dirty white mold. | Summer | Mildew | Begin when buds are opening and spray with potassium sulphide every 7–10 days until fruit is gathered. | Land should be well drained, kept free of weeds, and have circulation of air. |
| Grape | Spots resembling birds' eyes on young leaves and berries. | Early summer. | Anthracnose | Before buds open apply strong iron sulphate solution. Repeat after three or four days | Later spray with bordeaux 5–5–50, and burn diseased wood. |
| Grape | spots on leaves yellow above, with white mildew below. | Summer | Downy-mildew | Spray with bordeaux 4–4–50 before rains beginning about time fruit sets. | Spots on leaves are indefinite in outline, and turn dark brown. Leaves fall early. |
| Grape | Circular brown spots on leaves and berries, later turning black. Berries shrivel but do not fall off. | Spring and Mid-summer | Black-rot | Spray with bordeaux 4–4–50 when third leaf has expanded, when fruit is set, repeat every 2 or 3 weeks until fruit is nearly full grown. | Spray with ammoniacal copper carbonate when fruit is nearly mature. |
| Grape | White mildew on leaves and fruit stems. | Midsummer | Powdery mildew | Dust with flowers of sulphur, use machine. | Often causes shedding of fruit. |
| Raspberry and blackberry | Bright orange-colored powdery spots on leaves. | Spring | Orange rust | Dig and burn all diseased plants as quickly as discovered. | No spraying treatment valuable. |
| Raspberry and blackberry | Small purple spots on canes, later turning gray, sinking in and cracking. | Summer | Anthracnose | Before buds open strong iron sulphate solution and cut out diseased canes. | After buds open bordeaux 4–4–50 every two weeks. |
| Raspberry and blackberry | Large, irregular knots on the roots and at the crown underground. | Summer and autumn. | Crown gall. (bacterial) | Never set plants on infested lands, nor set plants showing root-knots. | No treatment. Plants should be carefully inspected before planting. |
| Strawberry | Spots on leaves, red or purple with white centre when old. | Spring and summer | Leaf-blight | Spray with bordeaux mixture 1, when growth begins, 2, when first fruits are setting, and after fruiting season. | Mow and burn leaves just after fruiting season. |

## Diseases of Orchard Trees

| PLANT | SYMPTOMS | TIME | DISEASE | CONTROL MEASURES | REMARKS |
|---|---|---|---|---|---|
| Apple | Brown spots on leaves and black scabby spots on fruit | Summer and autumn | Scab fungus | Spray with lime-sulphur 1–40 or bordeaux 3–3–50. Add arsenate of lead to either (2-3 lbs to 50 gal.) as insecticide | Spray 1, before buds open and as they are swelling (lime-sulphur 1–9). 2, as blossom buds open. 3, after petals fall. 4, ten or fourteen days later. |
| Apple | Blighting, wilting and blackening of leaves and tips of shoots. Cankers on limbs, bark depressed | Summer | Fire blight (bacterial) | Make systematic inspection of trees several times a week during growing season, prune out and destroy all blighted twigs, disinfect with corrosive sublimate and paint with gas tar. (Not profitable on old trees) | Remove all cankers on limbs with a sharp knife, disinfect and paint over. Cut well below infection in every case. |
| Apple | Black rough cankers on limbs and trunk. Bark cracked open, and is swollen out | Summer | N. Y. apple tree canker | Avoid injury to bark. All cankers should be pruned out, cut surfaces disinfected and painted over with gas tar. Spray in spring before buds open with lime-sulphur 1–9 | When spraying soak body and limbs. This disease common on Twenty Ounce. |
| Apple | Cankers on limbs and trunk. Bark dead, fallen away; wound marked by concentric callouses | Summer | European apple tree canker | Avoid injury to bark, treat all cankers as above | Paint over at once all injuries from hail, etc. |
| Apple | Circular brown pits on fruit | Autumn | Baldwin fruit pit or "stippen" | This is a physiological trouble, and no treatment has proven effective | Most common on Baldwin, also on Twenty Ounce Pippin, King and Spy. |
| Apple | Circular brown spots on fruit. Spots when old with minute black elevations at centre | Autumn | Baldwin fruit spot | Spray with bordeaux 4–4–50 beginning when fruit is half grown. Baldwin especially susceptible | Early sprays are not necessary for this disease alone. Most common in New England. |
| Apple | Fruit at first with brown spots. Later black and rotten. Scab | Summer | Bitter-rot | Spray with bordeaux 4–4–50, first about forty days after petals fall, then every two weeks. | Tissue of fruit near decayed portion bitter. Cankers on limbs sometimes found. |
| Apple | Scab like blotches on fruit. Brown specks on leaves | Summer | Apple blotch | Spray as for bitter-rot | A destructive disease throughout Southwest. |
| Apple | Yellow spots on leaves, rusty below | Spring and summer | Rust | Destroy all neighboring juniper trees | No other treatment recommended. |
| Apricot | Fruit rotten and covered with brown powdery mold | Summer | Brown rot | Plant resistant varieties. Spray with self-boiled lime-sulphur (Scott formula) 8–8–50, to which is added arsenate of lead, 2 lbs. to 50 gals | Spray first about time shucks are shedding from young fruit. Make 3 applications 10 days apart. |
| Cherry | Black knots on limbs | Summer | Black-knot | Prune out and burn all knots before leaves appear in spring | See that knots are removed from all plum and cherry trees in neighborhood. |
| Cherry | Fruit rotten and covered with brown powdery mold | Summer | Brown-rot | Same as for cherry above | Peach, apricot, and plum also affected. |
| Cherry | Leaves covered with reddish brown spots, fall prematurely | Summer | Leaf-spot | Spray with lime-sulphur 1–40 or bordeaux 5–5–50 | Make four applications. First as shucks are falling. |
| Cherry | Leaves reddish, wrinkled, curled; witches brooms on limbs | Summer | Witches broom | Prune out and burn all witches' brooms. Spray with bordeaux 5–5–50 | Make two applications, first just as buds swell. |
| Cherry | Leaves curl and show white mealy mold | Summer | Powdery mildew | Dust heavily with sulphur or spray with potassium sulphide 1 oz. to 3 gals. water | Often serious in nursery stock. |
| Peach | Fruit rotten and covered with brown powdery mold | Summer and fall | Brown-rot | Same as for cherry above | Use Scott's self-boiled lime-sulphur. |
| Peach | Leaves distorted and curled, dropping in early summer | Spring | Leaf-curl | Spray trees once before buds swell with lime sulphur 1–9 or bordeaux 5–5–50 | Easily controlled by this one spray. |
| Peach | Sickly yellow leaves, prematurely ripened fruit | Spring and summer | Yellows | Dig out and burn all diseased trees as soon as discovered | No other means of control. |
| Peach | Dark blotches on fruit, sometimes cracked | Spring and summer | Scab | Spray with Scott's self-boiled lime-sulphur 8–8–50 as for brown-rot | Avoid low sites, remove wind breaks, prune to give free access of air. |
| Peach | White mildew on leaves and fruit | Spring and summer | Mildew | Spray with potassium sulphide, or dust with sulphur | Commonly found only on young nursery stock. |
| Pear | Leaves blacken, fruit remains on, twigs killed, cankers on limbs and trunk | Spring and summer | Fire blight (bacterial) | Inspect every few days, beginning when blossoms fall. Cut out and disinfect all cuts with corrosive sublimate 1–1000. | The disease is even more severe on pears than on apples. |
| Pear | Brown spots on leaves and scabby cracked fruit | Summer and autumn | Scab | Spray as for apple scab above | Especially severe on Flemish Beauty. |
| Pear | Spots with dull red centre on leaves, red to brown spots on fruit | Summer | Leaf blight | Spray as for pear scab | Disease also attacks quince. |
| Pear | Yellow spots on leaves, yellow horn-like projections beneath | Spring and summer | Rust | Destroy all neighboring juniper trees | No other treatment. |
| Pear | Small angular spots with whitish centre on leaves | Summer | Leaf spot | Spray as for pear scab | Bartlett very susceptible, Kieffer immune. |
| Plum | Black knots on limbs and twigs | Summer | Black knot | Prune out and burn all knots before leaves appear in spring | Remove all similar knots from neighboring cultivated or wild cherry or plums. |
| Plum | Fruit rotten and covered with brown powdering mold | Summer | Brown-rot | Spray with lime-sulphur (Scott's self-boiled 8–8–50 containing arsenate of lead 2 lbs. to 50 gals.) | Make three applications first about time shucks are falling from young fruit. Other applications at intervals of three weeks. |
| Plum | Leaves with small reddish brown spots and falling prematurely | Summer | Leaf-spot | Spray with self boiled lime-sulphur or bordeaux 3–3–50. Make first application ten days after blossoms fall | Do not spray Japanese plums with bordeaux. |
| Plum | Leaves wilting and black, twigs killed | Spring and summer | Fire blight (bacterial) | Same as for fire blight of apple above | This disease not common on plum. |
| Plum | Fruit badly deformed and stunted | Spring | Plum pockets | Spray trees once before buds begin to swell with bordeaux 5–5–50 | Other applications of little value. |
| Plum | Leaves showing dirty white, mealy mold, and curling | Summer | Powdery mildew | Spray with potassium sulphide 1 oz. to 3 gals. water | Not often as serious on plums as on cherry. |

## DISEASES OF ORCHARD TREES — *Continued*

| PLANT | SYMPTOMS | TIME | DISEASE | CONTROL MEASURES | REMARKS |
|---|---|---|---|---|---|
| Quinces | Blighting, wilting and blackening of leaves. Tips of shoots die | Spring and summer | Fire blight (bacterial) | Same as for fire blight of apple; see preceeding page | This disease very common also on apple and pear. |
| Quince | Round reddish brown spots on leaves and fruit | Summer and autumn | Leaf and fruit spot. | Spray with bordeaux 3–3–50 as for apple scab | Spray three times during season |
| Quince | Fruit rotting, covered with minute pimples. Cankers on limbs | Summer and autumn | Black-rot | Spray early in spring before buds burst with, lime sulphur 1–12 | Prune, clean out, disinfect and paint over cankers. |
| Quince | Yellow spots on leaves, rusted below. Fruit also with bright yellow, mealy rust | Spring and summer | Rust | Destroy all neighboring juniper trees | No other treatment necessary. |

## DISEASES OF ORNAMENTAL SHRUBS AND VINES

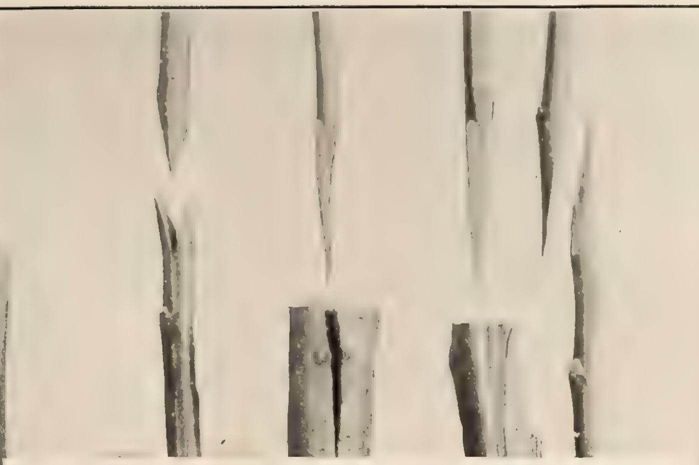
| PLANT | SYMPTOMS | TIME | DISEASE | CONTROL MEASURES | REMARKS |
|---|---|---|---|---|---|
| **Barberry** | Yellow, somewhat swollen spots on leaves with little cups on under side | Summer | Rust | Spray with bordeaux as soon as leaves have expanded | The rust on wheat, oats, etc. is another stage of this fungus. |
| **Five-leaf ivy (Virginia creeper)** | Dirty white mildew on leaves, with minute black dots in autumn | Summer and autumn | Powdery mildew | Apply flowers of sulphur to vine. Use hand dusting machine | Spraying with potassium sulphide, 1 oz. to 3 gals. water, also recommended. |
| **Five-leaf ivy** | Circular dark spots on leaves | Summer and autumn | Leaf-spot | Spray with bordeaux 4–4–50 beginning when leaves have expanded. Gather and burn leaves and fruit in autumn. | Boston ivy also attacked. |
| **Lilac** | Dirty gray mildew on leaves, numerous minute black dots in autumn | Summer and autumn | Powdery mildew | Spray with potassium sulphide, 1 oz. to 3 gal. water, or dust with sulphur, hand duster | Destroy leaves in autumn. |
| **Hawthorn** | Wilting and blackening of tips of shoots and leaves. Cankers on limbs or trunk | Spring and summer | Fire blight (bacterial) | Prune out blighted branches 6 to 8 inches below evidences of disease, and burn. Go over trees carefully and often | Disinfect all cut surfaces with corrosive sublimate sol. 1–1000. Paint over with gas tar. |
| **Hawthorn** | Yellow, swollen spots on leaves. | Spring and summer | Rust | Destroy all neighboring juniper trees as fungus winters on these | No spraying treatment recommended. Seldom destructive. |
| **Rhododendron** | Rust spots on under surface of leaves | Late summer | Rust | Destroy all neighboring fir trees | No treatment known. |
| **Rose** | Dirty gray mildew on leaves | Summer | Mildew | For greenhouse roses keep pipes painted with paste made of equal parts of lime and sulphur with water | Outside roses should be dusted with sulphur or sprayed with potassium sulphide 1 oz. to 3 gals. water. |
| **Rose** | Leaves with black spots, falling prematurely | Summer and autumn | Black leaf spot | Spray with bordeaux 5–5–50. Make first application as soon as spots appear | Repeat spraying two or three times at intervals of ten days. Destroy leaves in autumn. |

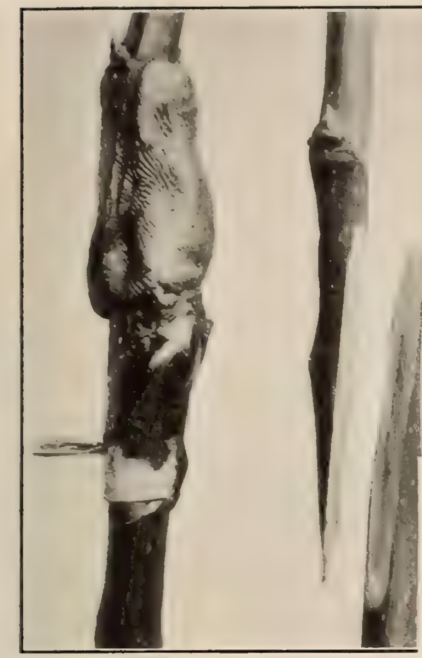
## DISEASES OF THE FLOWER GARDEN

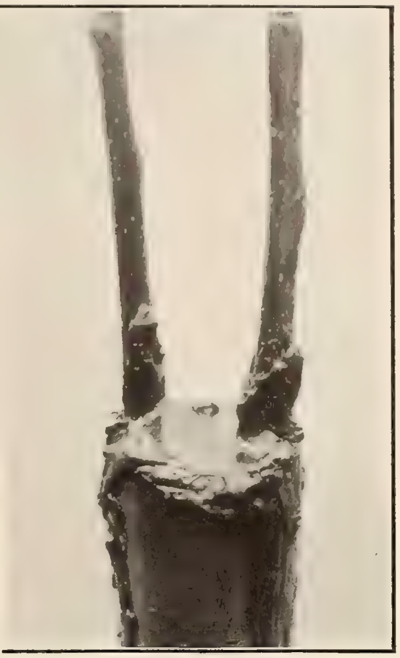
| PLANT | SYMPTOMS | TIME | DISEASE | CONTROL MEASURES | REMARKS |
|---|---|---|---|---|---|
| **Aster** | So little is known and literature | on subject so | indefinite, no | recommendation is attempted. | |
| **Carnation** | Soft rot of stem below surface of soil | Spring and summer | Stem-rot (Rhizoctonia) | In field change location of plants annually. In bench sterilize soil | Avoid over watering. Stir soil often. |
| **Carnation** | Plants die slowly, branch at a time | Summer | Stem-rot (Fusarium) | Same as for Rhizoctonia stem-rot | Often serious in greenhouse. |
| **Carnation** | Brown, powdery pustules on stem and leaves | During growing season | Rust | Spray with copper sulphate, 1 lb. to 20 gals. water. Use resistant varieties | Take cuttings only from healthy plants. |
| **Carnation** | Round gray spots on stem and leaves | In green-house | Leaf-spot | Same as for rust | Keep foliage free from moisture. |
| **Chrysanthemum** | Small round spots on leaves | In green-house | Leaf-spot | Spray with bordeaux 5–5–50 every ten days. | Ammoniacal copper carbonate less effective. |
| **Chrysanthemum** | Brown, rusty spots on leaves | In green-house | Rust | Same as for leaf spot | Avoid wetting foliage when watering. |
| **Gladiolus** | Yellow leaves, rotted bulbs | In storage most evident | Bulb-rot | Plant only healthy bulbs, practice crop rotation | Application of lime to soil may prove beneficial. |
| **Hollyhock** | Red and brown swollen spots on leaves and petioles | All season | Rust | Spray with bordeaux 4–4–50 throughout season | In late fall destroy all diseased parts |
| **Hollyhock** | Dead brown spots on leaves and petioles | Summer and autumn | Anthracnose | Spray as for rust | Plant resistant variet |
| **Larkspur** | So little is known and literature | so indefinite | no recommen | dation is attempted. | |
| **Peony** | Unopened buds turn brown and fail to open | Spring | Botrytis bud rot | Thorough spraying with bordeaux as soon as leaves and buds appear | Fungous disease. |
| **Peony** | Rather small, dark, dead spots in leaves and stems, often with red border | Summer | Leaf and stem spot | Spray with bordeaux before spots appear | Fungous disease. |
| **Peony** | Large areas in leaves turn brown and die | Usually after blossoming time | Botrytis leaf blight | Spray thoroughly as for bud rot, repeating again after blossoming | Fungous disease. |
| **Phlox** | Leaves, stem and blossom clusters coated with white mildew, later turning brown and dying. | Summer and fall | Mildew | Spray with potassium sulphide, 1 oz to 3 gals. Dust with sulphur as soon as disease begins to appear | Cut and destroy diseased tops in autumn. |
| **Violet** | Plants stunted, roots abnormal and pink within | In green-house | Root-rot | Sterilize soil or use new soil. Thoroughly drain and cultivate | Maintain proper moisture conditions. |
| **Violet** | Circular spots on leaves | In green-house | Leaf spot | Spray with ammoniacal copper carbonate | |

# Grafting and Budding for the Amateur

### By W. C. McCollom, Long Island


The four best systems. Reading from the left, they are saddle grafting; cleft grafting; side grafting; whip grafting


Whip grafting, the commonest way. On the left the graft has been tied and waxed


Cleft grafting, after the wax has been poured on the grafts

THE average amateur looks upon the process of grafting with wonder and admiration, as something that is apart from him, and only for a specially trained specialist. As a matter of fact, I know of no branch of the gentle art of gardening that offers more fascination as a recreation to the busy man, for there is no arduous labor involved and the interest in achievement is keen. It is work for the specialist if speed is a consideration, but otherwise it merely needs the attention to detail that can be given by any intelligent person.

Grafting (and budding is essentially the same), is the transferring of a small part of the top of one plant to another's roots and in such a way that the live tissues just under the bark in each case are brought into close contact. That's the place of union, and the only one.

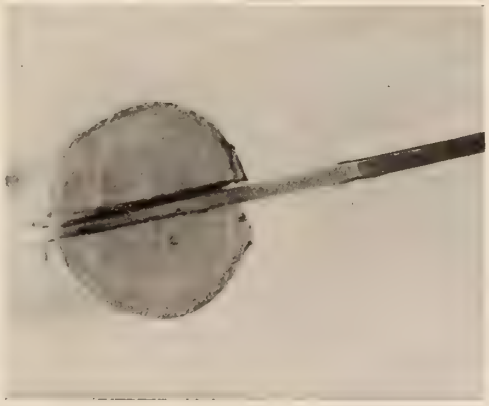
The reasons for grafting, or budding, may be many. Certain varieties of fruits, for example, bear better when grafted on to some stock which retards their own rank growth of wood and throws this energy into fruit production; on the other hand, it may be desirable, in some cases, to graft on to a stock with an extensive root system to induce rank growth. Grafting offers one means of restoring to vigor old orchards, by working over the old tops to newer and better varieties of more recent introductions. To the nursery-man grafting is a necessity, as it enables him to more quickly work up a stock of some new or desirable sort; he can cut up into many pieces the growth of his one specimen and get each piece to grow as a separate plant by joining it to the roots of an allied, but inferior, variety. Thus he sows apple seeds and grafts the seedlings with cions taken from a selected tree of known quality. All the named kinds of our orchard fruits are thus propagated. His seedlings would be a much mixed lot of unknown, and most likely undesirable crabs.

Trees and shrubs which are sometimes not hardy enough to stand winters in some locations can be made to endure by grafting on some stock with a hardier root system. A great many novel (and freak) forms can be had by grafting. The "tree" rose and all other "standards" of strange forms, the Camperdown elm, the weeping mulberry, etc.

You cannot graft trees and shurbs indiscriminately, however. The stock and cion must have a natural relationship. In other words, you cannot graft an apple on a maple tree, but we can (and do) graft a pear on the quince, to keep it dwarf; a peach on the plum, to gain hardiness; and lilac on privet, because it is an easy way to increase a stock, and privet is cheap.

The amateur, by grafting, may enrich his collection of varieties and keep right up to date; any one will exchange cuttings with you.

There are several well recognized methods of grafting employed, each one having its good and bad points and each one its special advocates. But the condition of the plant is, after all, more important. The one to be used as the stock must be healthy and vigorous. It need not necessarily be a rank, heavy grower, but it must be in good health, because the cions must gather from it what nutrition is necessary for their upkeep until a union is established. Always graft with a purpose in view. You can graft six different apples on one tree, if you must, but in the long run it will not be for the best because of the different periods of ripening. Better have six different dwarfs of the kind described in last month's GARDEN MAGAZINE.


Cleft grafting. The stock should be about two inches in diameter. Use a sharp knife or chisel

The time of year when the grafting is done is important; spring is preferable for all ordinary work. The proper time is immediately before growth starts (with me that is April 1st to 15th). I have known it done earlier and while the advocates of such early work claim that the graft gets a better start, there is also the danger of the wood shriveling because of drying winds and the limited amount of sap available. Watch the condition of the tree to be grafted and graft just as the buds start to swell. The flow of sap is then good and strong, and a quick union will result. Budding can be done at almost any time when good mature buds are available, there being so little necessary for the upkeep of the bud. But, even so, spring and early fall (September) are the accepted time.

Grafting and budding in the greenhouse can be done at any time of the year because it is possible to give each plant separate treatment and the conditions that are essential; but in all cases mature wood, which has been retarded, must be used, or in other words, the stock must be farther advanced in growth than the cion.

In selecting the cions select stock that is a good average size and healthy. The wood should not be abnormal in any way; if so, it is apt to shrivel too quickly — before it gets support from its new source. It should also not be unduly hard as it then takes considerably longer to establish a union.

The cions may be gathered in the fall and put away in a cool cellar in sand or damp moss to keep them from shrivelling. This is what the nurseryman does, and when any great amount of grafting is to be done, I think it is the really practical method. But we are not all so far sighted, and very often we do not think of grafting until spring comes. You can have just as much success from spring planted cions. Cut the cion early in the spring — as early in the spring as possible — but even if they are not gathered until a couple of weeks before grafting time they will be all right. But they must be gathered before the buds swell, and then buried to retard them.

There are special grafting tools, but they are not necessities. The most important instrument is a good sharp knife. If you have any budding to do use a budding knife; the knife used must be sharp and cut clean. I carry a very small oil stone with me and whet my knife occasionally. For cleft grafting you also need a chisel and a mallet or hammer for splitting the stock. The chisel also must be sharp so that a clean cut is made and no rough jagged edges are left on either stock or cion. Grafting wax and tying material are also necessary. Raffia is the best material for tying and it can be secured at any seed store. The wax can also be bought, but if you prefer to make your own this is how to do it: Melt together 1 pound of tallow, 2 pounds beeswax, and 2 pounds resin. Pour the melted liquid in some vessel and when partly hardened it should be pulled until it works freely. It can then be put away until wanted for use. When using wax for cleft grafts, I always heat it until it is a liquid and pour it on the graft. It then fills all crevices.

When top working a tree of any size, size up the tree before you start. Then ascend the tree and cut off the branches where you intend to graft. Cut off enough to have a good symmetrical tree after the grafts take; because after the grafts take it will be necessary to gradually remove all other growth. This takes from two to three seasons with a large tree. Cut the branches back until you have about two inches of wood to work the grafts on. After you have cut off all the branches upon which you intend to graft, split them with the chisel in the centre and down about three inches from the top. Place a wedge in each to keep it open and then place your cions in position, one on each side. The cions should have been previously shaped and if they don't fit perfectly, shape them again. Don't be careless about this, as it is very important. The bark of the cion and stock must fit together perfectly, and the scion should extend at least one and a half inches into the stock. In setting the cions be sure to get a bud just below the top of the stock and although this will be covered with wax it is the most promising bud of the lot and will push its way right through the wax. Cut off the cion three buds above the graft and then cover with wax. Pour the wax right in the cavity of the stock and cover the outside with wax. The wax can be partly hardened for this and worked on with the hands, which should be greased with lard. This cleft grafting is, I think, the only practical method for top-working old trees.

Whip grafting is perhaps the most generally practical method of grafting as it ensures a perfect union because both stock and cion are the same size; in cleft grafting the woody parts never unite.

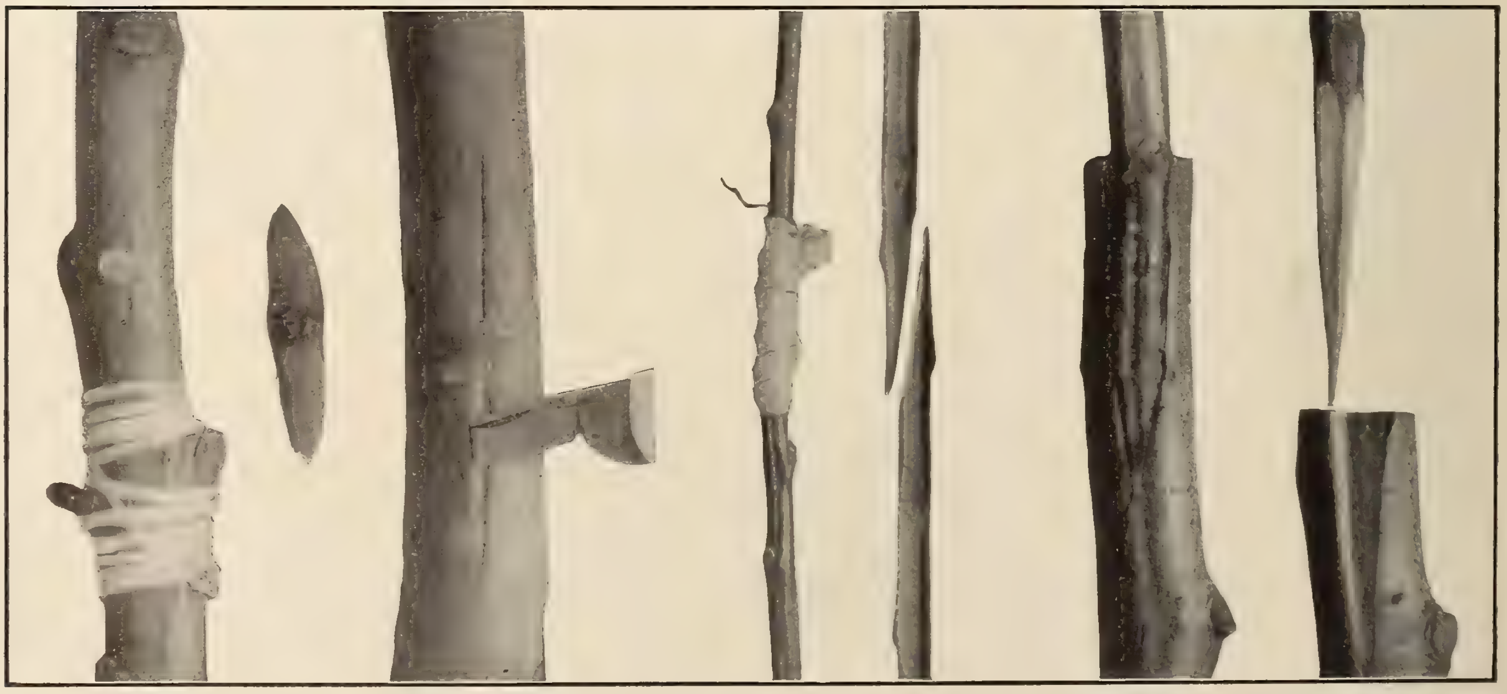
For whip grafting select cions the same size as the stock and cut through each diagonally. The cut should be about two inches long and care should be taken that the bark is not loosened in making the cut. Place the stock and cion together and tie securely, after which it should be thoroughly covered with wax.

Saddle grafting is very similar to whip grafting only in this case a V-shaped channel is made in the stock and the cion trimmed on three sides to fit. I see no advantage in this over the whip grafting, and it is not so easily done.

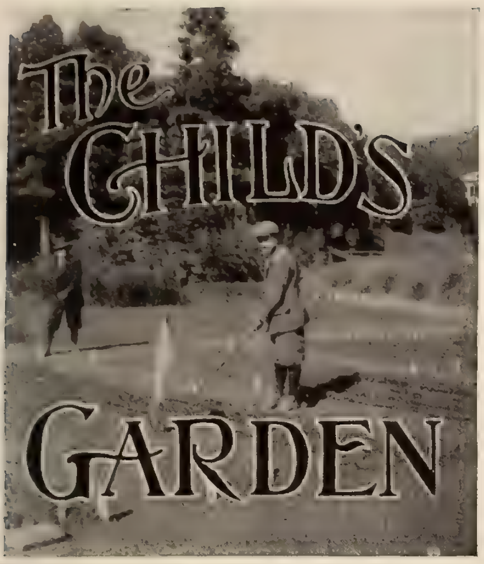
Budding is simpler than grafting, it differs only in that no wood is taken—only the bud in the centre of a shield of bark. Select good strong buds which should be cut with part of the adjoining bark adhering, and after making a cross-shaped cut in the bark of the plant to be used as the stock, loosen the bark with a piece of wood rounded on the end and made thin, or the end of a budding knife. Pry open the flaps and insert the bud. Now tie it securely. I would advise the beginner to place a little wax around the bud to exclude the air.

If it were not for the time involved side grafting would be more popular, I am sure. This system makes a good union and if two sides are grafted at one time it makes a good practical job. For side grafting the cuts are made V-shaped, deep at the top and gradually tapering off to nothing at the base. Fit the cions perfectly and tie and wax securely.

After all is made snug an extra precaution that often pays is to cover the stock with a heavy paper bag until the union is formed. This keeps the sun and wind from shrivelling the bark.



Budding is shown in the left. First, bud tied in position. The separate bud with "shield" of bark is ready for inserting. The flaps of bark on the stock are turned back by the knife for inserting the bud. The bud should be very thin and have at least three fourths of the wood removed on its inner surface so that the inside of the bark on the bud lays against the woody part of the stock. In the centre, whip grafting, showing how the parts are tied together. On the right, side grafting showing the shaping and fitting of the parts. Note the bud just above the graft.



Conducted by Ellen Eddy Shaw

## Work of the Month

THIS is a busy month in gardens. It is the most active time of all in the school garden. It is possible that some of you have not yet started your garden work. Perhaps the garden spot is damp. If so dig down for two feet and put in several inches of broken pot or stone. This will form a drainage area and convert the damp area into a dry garden spot.

Sowing of seed is really a continuous performance. This is true because the wise gardener does not have space lying idle in the garden. So he sows and resows. Seeds may be classified as small, medium size and large seed. Small seed, such as lettuce, should be sown one fourth inch deep; medium sized seed, as beet seed, one half inch deep and large seed, like beans one inch deep. Beans, corn and melons are usually planted in hills. This is so that a better and deeper root area may be produced and be less affected by dry weather.

In order that there may be always a tender, new crop of lettuce, radish and carrot, sowings must be made frequently. When the first lettuce plants appear above the ground make a second sowing and so on. Plant radish and carrot seed every week. Pick radishes when they are about one half inch in diameter, after that the radish begins to get pithy and stringy.

Do not plant the seeds of tender vegetables until about the middle of May or until all danger of frost is over. The tender vegetables are beans, corn, cucumbers, melons, peppers, pumpkins, squash, sweet potatoes and tomatoes. About this same time plant outdoors seeds of Oriental poppy, phlox, petunia, nasturtium, sunflower, aster, balsam and coreopsis.

There are certain things to watch out for in May. Some day you may see a plant all collapsed from no cause apparently. This is the work of our old enemy, the cutworm. If some plants get frosted shield them from the heat of the sun. Spray them with cold water, this treatment may bring them to. Never cultivate the garden immediately after a rain. When you see flower buds appearing on the rose bushes push things along by watering the plants once a week with liquid manure. Do this until color is seen in the bud. Then stop. When shrubs are through blossoming cut out all the old wood. Cut this old wood way down to the ground.

Plant bulbs of cannas and dahlias. An excellent vine to plant at school is the gourd. Interesting gourds for children to raise are the dish cloth, snake, bottle, apple, and gooseberry. The cucumber and balsam vines are worth the planting.

Would you like a red garden, a brilliant one too? If you wish to have a dash of red color appear in April you can have it by beginning next fall. Plant Artus tulips next October. They will bloom the following April. Shrubs of flowering almond carry on the effect in May. The Oriental poppy helps out in June. Hollyhock is a good one for July. The nasturtiums and phlox begin their good work too. Firefly snapdragon is in a blaze of glory in August. The red-hot poker or tritoma is a good flower for the September garden and the Japanese lantern plant shows its red fruit in October. A part of this effect can be produced this year.

This month add to the wild flower garden columbine, lady's slipper, violet, quaker-lady and forget-me-not.

## St. Mary's Park School Garden

THIS school garden, occupying a quarter-acre of unimproved park land, in New York City is under the care of boys from seven neighboring schools.

The first planting last year was done on Arbor Day, May 5th. One hundred and eighty-eight boys received a model lesson in planting and then each planted his 4 x 8 ft. plot with seven vegetables. A few days later a row of flower seeds was added to each plot.

Late in June three of the four sections of the garden were cleaned up by the farmers, each boy proudly displaying his fine crops to the visitors and then carrying home the results of his labors.

The fourth section was left undisturbed, and formed a model for the vacation school class, which took possession on July 10th.

Plantings in the three sections were made on July 12th, 14th, and 19th. To give some idea of the yield in these small plots, 947 radishes were pulled in one of the quarter sections, and only one row of radishes was planted in each plot.

Several plots were devoted to unusual vegetables, such as okra, sweet potato, broom corn, flax, peanuts and about ten other kinds of plants.

The Nature Study Club of the 23rd and 24th districts, of the Bronx, has financed this garden, space for which was kindly granted by Park Commissioner Thomas J. Higgins, formerly a member of the Board of Education and a great friend of all school children.

One boy announced that his radishes brought six cents a bunch, they were so fresh, and another said a neighbor gave fifteen cents a head for all the lettuce he could spare, but his father said it was too fine to sell.

Two boys of the summer class have urged their parents to move where they can have their own gardens and feel confident that they can keep the household supplied with several fresh vegetables.

New York City.

Anna Hill,
*Garden Supervisor.*

St. Mary's Park garden (New York City) suggests the use of public land for children's gardens

# Readers' Service

TO SUPPLEMENT the magazine itself we have established the Readers' Service, by which the whole organization of the staff of experts, with whom the editors of the magazine are in touch, is brought right to the door of the individual reader. All that is necessary for the reader to do is to send an inquiry by mail, and every effort will be made to give a complete and satisfactory answer — by return mail, if possible — or, at all events, to put the inquirer in the way of getting the knowledge sought. Only answers of general interest will be published here.

This special service has been of real value to many readers, as dozens of letters testify. And it is all available to every reader of THE GARDEN MAGAZINE upon request and without expense (although a stamped and addressed envelope for reply is appreciated). Through this service each reader of THE GARDEN MAGAZINE, therefore, has the advantage of the most expert advice that the editors of the magazine can procure.

There are some things we cannot do. We cannot, for instance, undertake work that properly belongs to expert professional service. We cannot supply plans for garden design or for garden making or for buildings, because this really requires intimate knowledge of the special conditions and a personal inspection; nor can we make complete planting lists for individual purposes. We are, however, in such cases ready to give references to people who we think could adequately serve the inquirer.

We are always ready, however, to answer specific questions and to make suggestions regarding garden designs or planting plans that may be submitted to us. Address all inquiries to The Garden Magazine Readers' Service, Garden City, Long Island, N. Y.

### Vines for fences

I want a clinging evergreen vine that will require little care and is suitable for permanently covering a board fence.— H. A. W., New Jersey.

— There is only one vine which will answer these requirements — the English ivy — and it may not thrive in the situation you have available. Hall's honeysuckle is a hardy, free-growing vine, but it is not self-supporting.

### Ivy on oak trees

English ivy is growing on a few of my specimen oak trees; in one case it is even up to the top of the tree. Is there any danger of the trees being lost? — S. E. P., New Jersey.

— A small tree would certainly be injured by having a large vine growing over it, while an ordinary vine on a large tree would probably do no injury. There would be no harm to the tree from a moderate growth of the ivy but do not allow it to grow so vigorously as to cover all the branches.

### Planting privet

How should the soil be prepared for California privet?— F. C. E. P., New York.

— In planting California privet dig a deep trench, put in a layer of manure and then some soil. Place the plants so that they will stand in the soil two or three inches deeper than they were originally, and below the ground level. As cultivation is given the trench will gradually be filled up.

### How vines twine

What is the difference in direction in which hop vines and bean vines twine? Do all vines twine in the same direction? — B. W. F., Alabama.

— The hop vine twines in the same direction as that in which the hands of a clock move. Some vines twine in one direction, others in another; but each species always twines in the same direction. The bean vine twines against the sun and the hop in the opposite direction.

### Supporting vines

What is the most approved method of supporting vines, climbing roses, etc.?— C. T. H., New Jersey.

— Vines can be supported by driving staples into the side of the house. This, of course, does not apply to the climbing varieties. Roses that are not too large can be supported in this way; but for twining vines, the most practical thing is a trellis of poultry wire stretched on a frame made of gas pipe.

### Dahlia buds dropping off

Why do dahlia buds drop off, breaking close up to the bud, soon after they commence to grow? — M. G. T., Maryland.

—The dropping off of dahlia buds is a common trouble. It is due to some local condition, and in some regions can be overcome by not planting until the beginning of July. If the plants are too far advanced when the extremely hot weather sets in, they are sure to go wrong.

### Trimming roses

How and when ought roses, like the Hermosa, be trimmed?— G. E., Ohio.

— Prune roses in the spring before growth starts. Cut back according to requirements. If you want large flowers, cut back very severely; if you want a profusion of smaller flowers, thin out rather than cut back. The rose flowers on new wood and the stronger you can induce the new wood to grow the better flowers you will have.

### Seeds of perennials

What is the best time to plant perennial seeds for next year's blossoming?—A. M. R., Connecticut.

— We prefer to sow perennial seeds in August — that is, as soon as the seeds are ripe. By waiting until the following spring the seeds are likely to become over-dry and germination is slower. Of course if you sow in August seed which is a year old you are in a worse predicament than if you had sown seed in April, because you did not get the necessary current year's growth.

### Fertilizer facts

What are the comparative merits of manure and commercial fertilizer? Which is the less expensive and more beneficial to use on land rented for one season only, and which has a more lasting effect on the soil and should be used on land permanently producing and needing to be worked a second year? — B. R., New Jersey.

— The question of expense depends on the availability of the two fertilizers. If you have stock on the place the manure will certainly be cheaper than any of the commercial fertilizers at $25 to $40 per ton. The manure is a balanced fertilizer, containing all three of the elements of plant food — nitrogen, potash and phosphoric acid — but are in a less available form than in a commercial fertilizer and therefore give results more slowly. On land rented for one season the self-interest method would be to use a quickly available fertilizer, such as nitrate of soda, muriate of potash, etc. Crops will immediately assimilate these but there will be no addition to the fertility of the soil for the coming year. In using manure the greatest benefit will be derived by crops sown the second year after the application of the manure. The texture of the soil is a factor in determining this. On light, sandy soils manure will give greater moisture-holding capacity, but the commercial fertilizer will give bigger crops the first season.

### Yellow flowers for all summer

I want to have a bed of yellow flowers all summer. What shall I plant?
New York. A. C. B.

—For the earliest spring bloom the beds should have been filled in the fall with bulbs, such as crocuses and narcissus. These can be left in the beds all summer. When the flowering season is past, fresh manure may be lightly forked into the soil without disturbing the bulbs. Let the leaves of the bulbs ripen well before they are finally cut off. The other plants will soon cover the ground, hiding the foliage of the bulbs. The suggestions are for planting from the centre outward: (1) Canna Austria; *Helianthus debilis*, var. *Stella;* coleus Golden Bedder; *Celosia pyramidalis*, var. *aurea* (or feathered cock's comb). (2) *Celosia pyramidalis;* Calendula Prince of Orange (old-fashioned marigold); canna Buttercup; coleus Golden Bedder or Yellow Verschaffeltii. (3) *Coreopsis lanceolata; Gaillardia aristata;* any of the Helianthus family; hardy chrysanthemums in variety.— J. T. S.

### Making a pasture

I have a plot of ground now covered with weeds. Can I prepare the soil and plant grass seed so as to pasture cows on it this year? — J. H., Missouri.

— You cannot plant grass seed and have it ready for pasture this year. Barley may be sown as early as possible, followed by four or five sowings of oats and peas at weekly intervals. The oats and peas will serve as soiling crops for July. When the last sowing of oats and peas is made, sow corn, or corn and sorghum, for use in August and September. The ground occupied by the oats and peas will be free by the end of June; sow millet and barley for use in late September and early October.

### Flowers to follow hollyhocks

What good perennial plants — preferably tall growing — can I use to follow hollyhocks in bloom, which will grow well in the partial shade of the large leaves of the hollyhocks? — F. R. C., Pennsylvania.

—There are no plants which will grow in the situation described. The only practical way to keep a succession of bloom is to transplant flowers in pots to the border after the hollyhocks have bloomed. There is nothing that will grow in the constant shade of the hollyhock leaves. If the hollyhocks are spaced well apart you could put in Helenium, chrysanthemums and other compositæ.

### Fertilizing with poultry manure

What is the most efficient method of utilizing poultry manure as a fertilizer? With what, and in what proportion, should it be combined? — G. C. B., Massachusetts.

— Hen manure furnishes fertilizing elements in more concentrated form than any other manure. Owing to this fact, it should be mixed with some less active material to increase its bulk. The character of the material to add depends on whether the soil is light and sandy or a heavy clay. For either light or heavy soils it may be mixed with wood ashes if it is to be used at once, using three parts of the manure to one of wood ashes. For light, sandy soils with little humus, mix with three or four times as much leaf mould or loam. For heavy soils use a sandy loam in place of the leaf mold, or road dust or even ashes. Either of these composts may be applied as top dressings or directly to the plant. If the hen manure has not been properly cared for during the winter by being composted, it is probably of very little value now as it rapidly loses its ammonia through decomposition.

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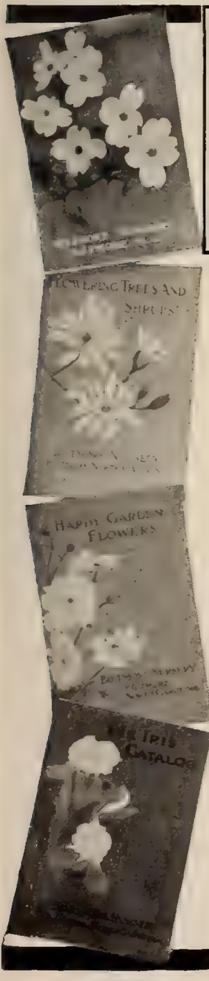

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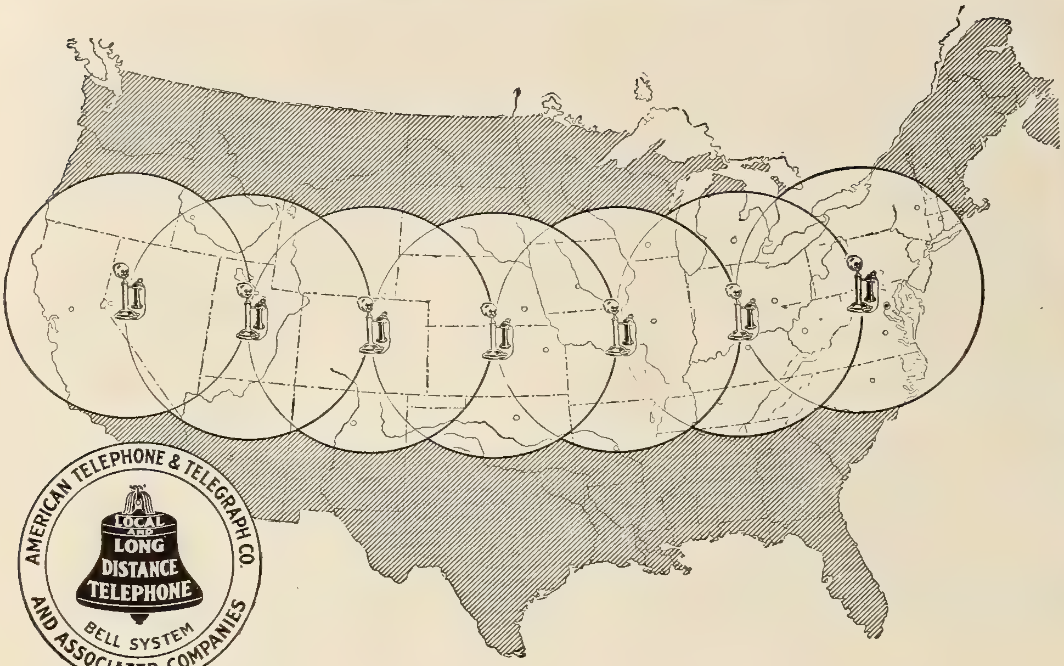
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KILLING the BUGS

## Preparing Spray Mixtures

FOR the control of the plant diseases mentioned in the preceding pages (247–250) there are certain standard fungicides which have been tested and approved. All the ready-to-use preparations on the market are based on these same formulæ because the actual necessities of the case are well understood and there are comparatively few substances which fulfil the requirements.

Home mixing is troublesome but at the same time interesting, and in the hands of a careful operator, the results are sure. But on the other hand, the purposes of the application are sometimes completely defeated through careless preparation.

The most important fungicides are bordeaux mixture, concentrated lime-sulphur, Scott's self-boiled lime-sulphur, ammoniacal copper carbonate, potassium sulphide, copper sulphate, sulphur, corrosive sublimate, and formalin. No one of these can be used in all cases, but each has its use and when properly applied will prove effective.

*Bordeaux mixture* is the fungicide most generally used. The strength varies according to the plant to be sprayed. It may be prepared by putting 4 pounds of copper sulphate in a bag of coarse cloth and hanging this in an earthen or wooden vessel containing 4 to 6 gallons of water. Then slack 4 pounds of quick lime and add thereto 25 gallons of water and mix equal parts of the two by pouring the solutions together in a third vessel; stir and keep stirred while spraying. A weaker solution may be made by using 2 to 3 pounds of copper sulphate and 3 pounds of lime to 50 gallons of water. The weaker solution may be employed wherever the other proves too strong. For peaches and Japanese plums do not use bordeaux mixture. Use instead self-boiled lime-sulphur. A plain solution of copper sulphate; 1 pound in 15 to 25 gallons of water, may be employed before the buds break, the weaker solution being used on peach. Ready to use bordeaux can be had in cans.

*Concentrated lime-sulphur* is made by using 40 pounds of good lump lime, 80 pounds of sulphur and 50 gallons of water. Heat about ten gallons of water in the cooking vessel and use it to slack the lime. To avoid losses of materials by spilling over the lime should be added in small quantities at a time. As the slacking commences empty in the sulphur, and keep the mixture well stirred to break up the lumps of sulphur and lime. When the entire amount of lime has been slacked, add the full amount of water. A sufficient quantity should also be added to provide for evaporation by the cooking so that at the completion of the boiling there will be approximately fifty gallons of mixture. Boil the wash vigorously for one hour in which time the sulphur should be completely dissolved. This concentrated solution should be diluted according to the recommendation given in the tables already given in the preceding pages.

*Scott's self-boiled lime-sulphur* is not a boiled solution as might be inferred from the name. It is prepared by placing in a barrel 8 pounds of good stone lime to which is added a small quantity of cold water to start slacking. Eight pounds of sulphur worked through a sieve to break up the lumps is then added slowly to the slaking lime, which is kept from burning by the addition of just enough cold water so as not to drown it. The slaking mixture must be stirred constantly. Just as soon as the slaking is completed (5 to 15 minutes) fill the barrel with cold water (50 gallons). The mixture is strained into the sprayer tank through a

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sieve of 20 meshes to the inch. It must be agitated constantly while being applied, as it settles rapidly. There are commercial ready-to-use counterparts of this.

*Ammoniacal copper carbonate* may be prepared by making a paste of 5 ounces of copper carbonate with a little water, and diluting three pints of ammonia with 7 or 8 volumes of water. Add the paste to the diluted ammonia and stir until dissolved. Then add enough water to make 45 gallons. Allow the mixture to settle and use only the clear blue liquid. This preparation loses strength on standing. It may be used instead of bordeaux mixture in late spraying and thus avoid the risk of injuring the appearance of the fruit.

*Potassium sulphide* (liver of sulphur) is used at the rate of 1 ounce to 3 gallons of water. This preparation loses its strength on standing and should therefore be used immediately. It is particularly valuable for surface mildews.

*Iron sulphate*, a saturated solution, with one part of commercial sulphuric acid to every 100 parts of water, is valuable for grape anthracnose, the dormant vines being treated by means of sponges and brushes. This solution should be prepared just before using.

*Formalin* made by mixing one pint to 30 gallons of water is frequently used for the prevention of potato scab.

*Corrosive sublimate*, 1 ounce to 7 gallons of water is also effective for potato scab. It is used as an antiseptic solution, also in treatment of cankers on trees.

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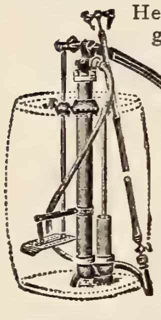

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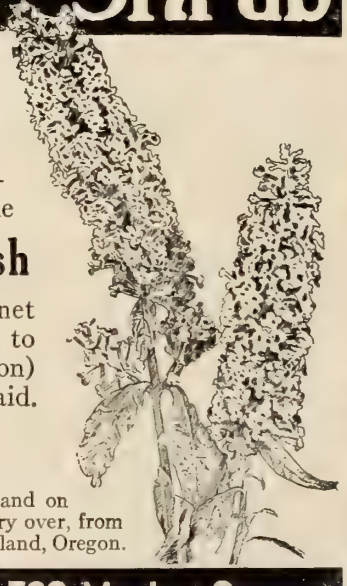

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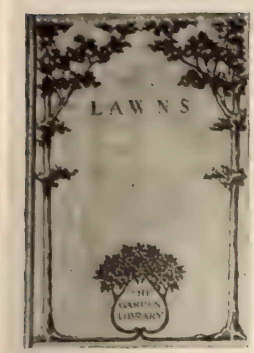

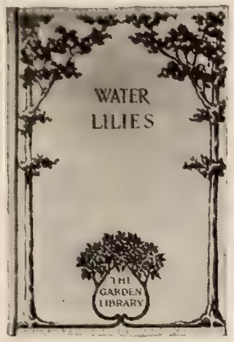

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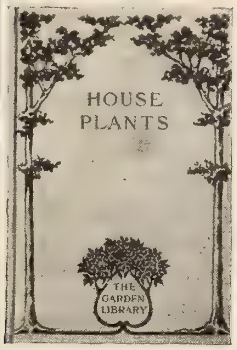

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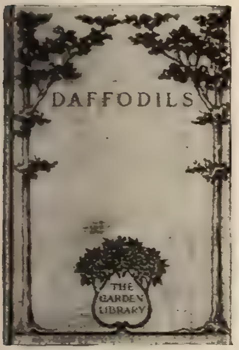

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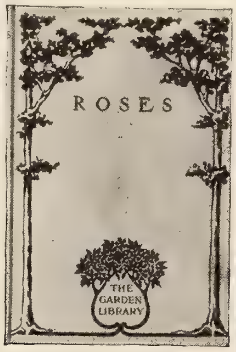

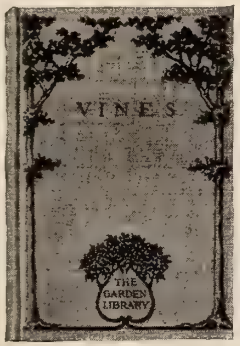

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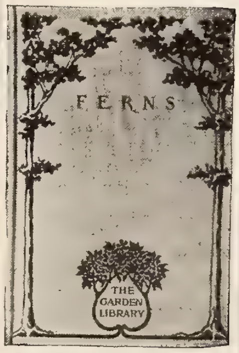

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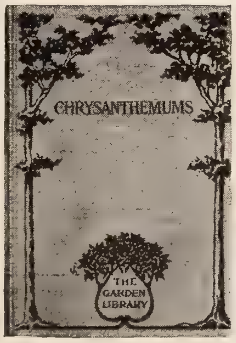

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plant is kept concentrated on the crown bud. This strengthens the blossoms in some way and causes those early clusters to fruit, when under ordinary conditions they would be barren. As soon as they get top heavy at all, I set poles and train the single vine up and around, tieing with bits of raffia. By July 10th, we usually have ripe tomatoes to eat and from then the supply is continuous until frost.

With the tomato vines trained to poles it is possible to keep up the cultivation and maintain a dust mulch, so that there is no suffering from lack of moisture, even in the dryest of seasons. It sometimes happens, though, that I wish to plant in ground that is deficient in humus. In that case I supplement the ordinary water-holding capacity by means of some old tin cans. These have their bottoms punched full of holes, and are set into the ground near the middle of the root system. In that way no water is lost through evaporation, and there is no tendency for the soil to bake up hard around the plants after watering. Liquid manure may also be applied in the same way, and to this treatment I have had tomatoes respond wonderfully.

Maine. John E. Taylor.

## SOUTHERN DEPARTMENT

### Pumpkins and Winter Squash

THIS is the month for planting pumpkins and winter squash. Both should be more popular in the South than they are. They furnish fruit from July to frost with very little trouble or expense.

Sow some gourd seed. The vine, as well as the fruit, is quite ornamental. Do not plant the pumpkins and squash close to the melon patch, particularly if you expect to save some of the melons for seed.

Sow peanuts and chufas (or earth almonds) at once if you have not already done so.

Millet, sorghum cane and other similar forage crops should be sown now.

Plant another crop of white potatoes some time during the month. Also okra up to June 15th.

Continue setting out sweet potato plants. Last year I had a crop of half a ton of potatoes from just three rows thirty-five or forty yards long. This season I am going to give better fertilizer and more attention to cultivation, etc., and expect even a larger yield.

If you want to have some extra large specimens of egg plants, tomatoes and peppers, give the plants liquid manure. Be careful when applying it; if the soil bakes hard around the plant it will do more harm than good. Be sure that the plants get plenty of fresh water. To get the largest fruits plant Chinese Giant pepper, Ponderosa tomato, and New York Improved egg plant. I have also grown some Black Beauty egg plants weighing over six pounds. That variety is a little earlier than the New York Improved.

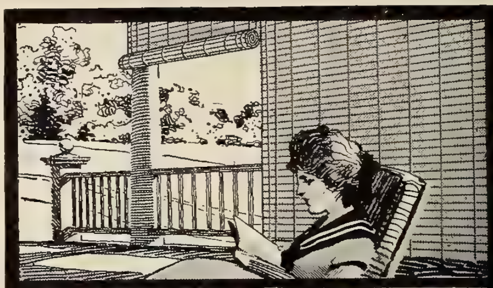
Watch out for the black squash bug on the watermelon vines. Hand picking is the only successful method of getting rid of them.

Sow cabbage seed now, in order to have cabbages for use in the late summer and early fall.

Continue to sow seed of edible cow peas, yard long beans and lima beans. Fordhook and Wood's Prolific (or Improved Henderson) are the most prolific bush sorts, I find, for the South.

Keep the cultivator going; don't let the grass and weeds get large, and while you are busy in the vegetable garden, do not neglect the flower beds, for weeds and grass will grow there, too, and be harmful to the plants.

Georgia Thomas J. Steed.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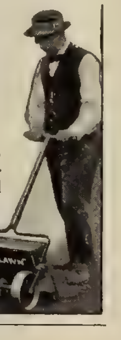

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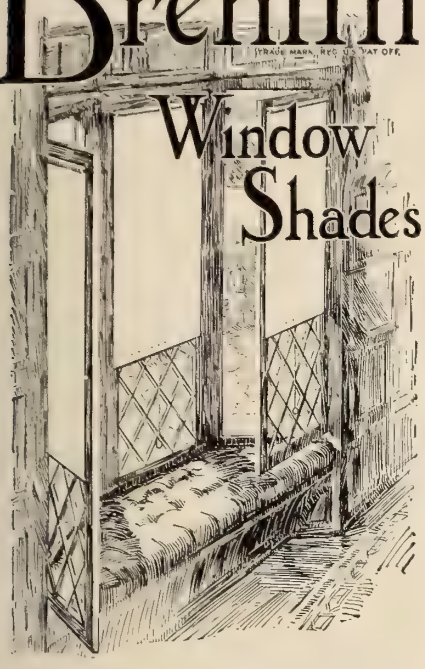
# Brenlin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In it are actual samples of Brenlin in all colors, also in Brenlin Duplex — and many helpful suggestions for the artistic treatment of your windows. With it we will give you the name of the Brenlin Dealer in your town.

Look closely for this mark— BRENLIN perforated along the edge of every yard. Be sure that you see it when buying and when your shades are hung. Chas. W. Breneman & Co., 2073-2083 Reading Road, Cincinnati, O.

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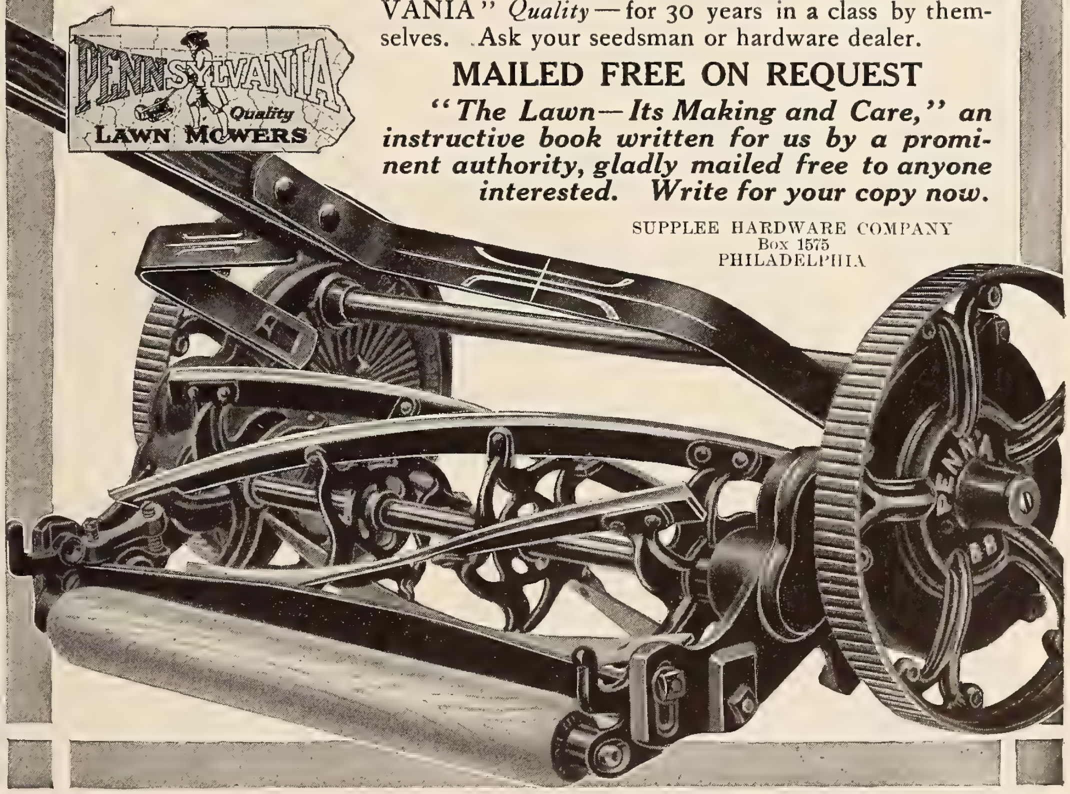

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A lawn should not be raked after mowing, a rake pulls up the roots leaving a rough and ragged appearance.

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Put on and off in a second—durable and does not drag on the mower—ask your dealer or send for a copy of "Useful Things for the Lawn". It fully describes the "Detachable" Hose Reel, the "Easy Emptying" Grass Catcher for lawn mowers and a number of other mighty valuable lawn articles.

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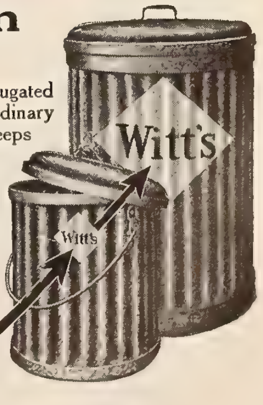

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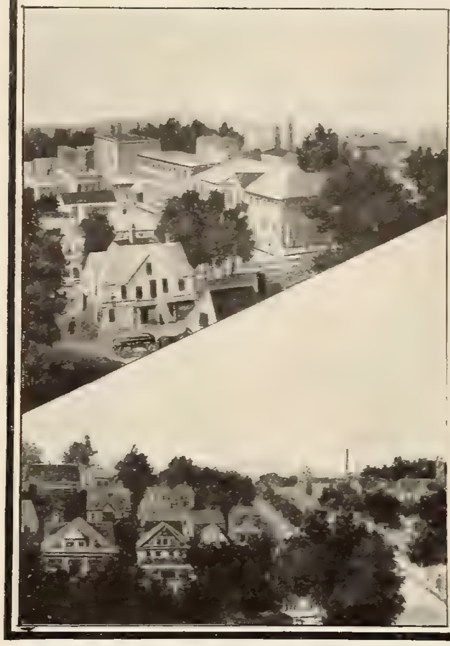

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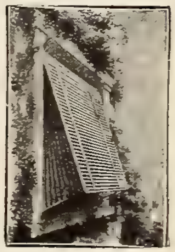

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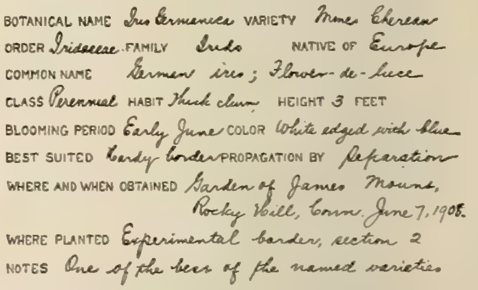
THEORETICALLY all good gardeners, like all good housewives, are supposed to know precisely where everything is. In practice this does not always work out, especially in an age when the gardener and his or her garden bear — more's the pity! — a less intimate relation, speaking generally, to each other than in bygone days. A garden record, on simple lines, has at least wisdom, if not actual necessity, in its favor. For my own part I would grant both the wisdom and the necessity, and then add pleasure and education.

When, in the course of garden events, all these considerations took hold of me with a certain degree of insistence, I thought that I could have a better time making my own record book than trotting around trying to buy something that, after all, might not quite answer my purpose.

Here is how I set about it. For a dollar and forty cents I bought a patent ring binder with a stout cover of gray canvas, selecting the 11½ x 9½ in. size as the most convenient. (The lesser dimension is the width.) Then I figured out very carefully just what information I wanted to keep on record and laid out a blank form for the sheets of the loose leaf system that I proposed to use. The more I thought of it, the more I was convinced that I might as well keep the record as complete as possible, so I decided upon a printed form that should provide space for not merely the Latin and common names, the usual class, height and color designations and the place of planting, but the garden whence a plant came or, if purchased, the name of the firm and the price, with the date in either case; the botanical order and family, the country of which it is a native, the general habit, to what it is best suited, how it is propagated and also any remarks that I might care to make. As all this printing could easily go on the upper half of the sheet, it struck me that it would be a good idea to leave the lower half blank so that an illustration could be pasted on it. At a cost of less than a cent apiece, I had two hundred and fifty of these sheets cut to the proper size, printed and perforated with the three necessary holes to fit the binder. The total expense, therefore, ran a little above four dollars, which may seem a great deal at first glance but is not, as the record will last a lifetime. Personally I have found that the convenience warranted my investing in a second book when the first got crowded, and now I use Volume I. for perennials and Volume II. for annuals, biennials, shrubs, herbs and wild flowers.

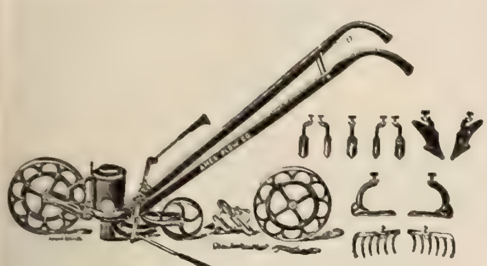


BOTANICAL NAME Iris Germanica VARIETY Mme. Chereau
ORDER Iridaceae FAMILY Iris NATIVE OF Europe
COMMON NAME German iris; Flower-de-luce
CLASS Perennial HABIT Thick clump HEIGHT 3 FEET
BLOOMING PERIOD Early June COLOR White edged with blue
BEST SUITED Hardy border PROPAGATION BY Separation
WHERE AND WHEN OBTAINED Garden of James Mount, Rocky Hill, Conn. June 7, 1908.
WHERE PLANTED Experimental border, section 2
NOTES One of the best of the named varieties

A really practical record of one's plants and flowers can be thus kept every year

If the amateur protest that this record is too elaborate, I answer that it is simplicity itself. No sheet is, of course, put in the binder until it represents a plant, or plants, in the garden; but, if time presses, only the botanical and common names may be filled in at first, though, lest memory fail, it is well to add at once the source and also the location in bed or border. The rest may be the work of long winter evenings or — it may be left undone. The essential thing is the record of varieties and the place of planting.

I use the loose leaf system because it is elastic and therefore incomparably better than a bound volume. Besides it is self-indexing. I find it easier, in placing the sheets in the binder alphabetically, to follow the Latin names, which rarely vary as do the common names. It is not difficult to memorize these and, inasmuch as every amateur should know them, the record serves a good educational purpose in that point alone; the mere



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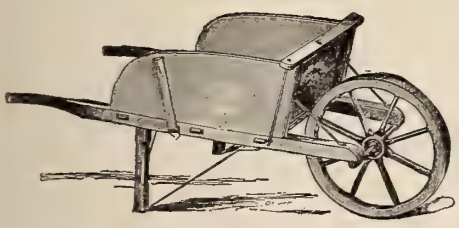

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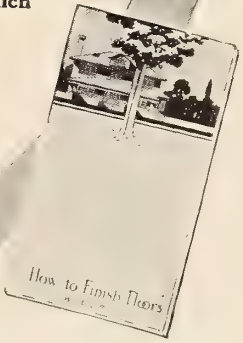

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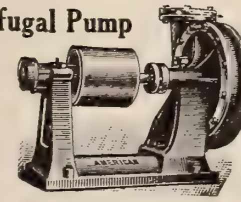

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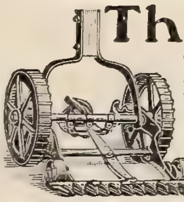

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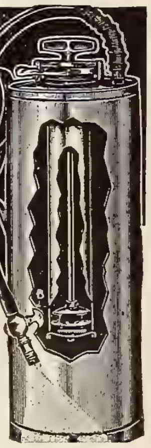

LET us send you free our book telling all about the new ways of spraying for better crops of fruits and vegetables, greener, thicker lawns, and shrubs, cleaner live stock quarters. Let us show you the sprayer you want—whatever your needs may be—the one that will do the work most thoroughly, quickly and easily—the sprayer used and endorsed by most Experiment Stations and 300,000 successful fruit growers, truck gardeners and landscape gardeners.

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in 40 styles and sizes, has **proved** itself the most efficient, durable and economical sprayer made. For spraying trees, field and garden crops, and lawns, it is unequaled. Auto Spray No. 1 shown here, fitted with Auto Pop Nozzle is the most powerful and efficient hand sprayer made. Capacity four gallons. Half the pumping and solution does double the work of other sprayers. Throws round, fine or coarse sprays. *Power Sprayers* for every purpose of every capacity, fitted with Brown's

**Non-Clog Atomic Nozzle**

the greatest time and money saving invention in years — positively will not clog—adjustable from fine mist-like spray to powerful stream. Absolutely self cleaning. Ask for Complete Spraying Guide — a book that will prove of big money value to you. Write today.

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**For Your Friend Who Loves a Garden**

Innumerable love gardens, old and new, live for those who love them in the pages of Lena May McCauley's delightful book,

**The Joy of Gardens**

Illustrated with many exquisitely colored photographs of the fair gardens described, this book is also quite a guide to those who are bent upon the development of their own garden.

"Miss McCauley loves flowers and gardens, and it is safe to say that by this, at once her floral creed and justification, she will make many another garden devotee."
*The Chicago Record Herald.*

***Price in box, $1.75 net. At all booksellers.***

**RAND, McNALLY & CO.**
*Publishers*
Chicago Los Angeles New York

act of writing down the Latin names associates them with the common ones and helps materially to fix them in the mind.

Two records could go on a page, or both sides of the sheet may be printed, but my preference is that each leaf should have its own individuality. For purposes of convenience, especially in the way of personal observation, I even allow an entire leaf to a distinct variety. Thus, while I am growing only two species of trollius, I have ten named kinds and I find it better to record them separately. So, too, with the fraxinella and the perennial pea, where in each case the white offers a greater problem than the pink; they are best kept apart.

All this, however, is merely a matter of one's own desire or the time that can be spared, and the final test of the practicability of the record is that it is readily adaptable to the needs of any gardener who finds that his memory, no matter how good it may be, is likely to slip a cog once in a while.

As to the desirability of pasting in pictures, such illustrations have a certain value in associating form with name, and even from the decorative point of view they are worth while. Nowadays good ones are not hard to find, and here and there a color print may be picked up. Women gardeners with lots of time at their disposal would certainly find the pictures appealing and one might fancy them writing suitable poetical quotations on the reverse side of the leaves. Nor is the poetry undesirable — nor anything else that gives the record the personal touch. Like the garden itself, the record is one's own, and to do with it as one pleases is no small part of the charm.

New York. H. S. Adams.

## Overalls Versus Skirts

AFTER serving an apprenticeship at cultivating a vegetable and flower garden in any second-season tub gown, I last year donned the regulation overall and felt it made me a dignified, certified tiller of the soil. Nothing could be neater than a pair of large size, dark brown denim overalls that will accommodate any desired amount of French balbriggan or lingerie in its capaciousness, and nothing will expel the dust and insects more efficaciously.

This looks like a child but it really is a "lady gardener" ready for work

The largest sized overall carried in a country general store will be none too large if it is to enclose likewise a clean tub gown.

The ease with which a woman can stoop, step, bend and bestride, and the freedom given every muscle, are strong points in favor of the overalls, to say nothing of them as a safeguard to seeded beds and sprouting tendrils.

No "hobble skirt," whose spread is about that of one leg of my overalls, can vie with them in modesty, whereas there was always an apology offered for the bedraggled skirt.

New Hampshire. Nushka.

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The **ironed** pieces pile up with incredible rapidity when the Simplex does your ironing.

**It's five times as fast as ironing by hand** and **better.** Saves health, strength and beauty. Gets more work out of servants and keeps them happy. Saves fuel and wages.

**SIMPLEX IRONER**
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The Simplex easily and quickly irons all flat pieces and plain clothes—table linen, bed linen, doilies, curtains—the big bulk of the **Ironing** which takes so much time and strength by hand. It gives a more **beautiful finish** than an expert laundress. Pays for itself in six months.

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No. 3— Contains over $7.00 worth of extra nice bulbs, all labeled, no two alike $5.30 — all prepaid to any part of the U. S.

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"THE UNIVERSAL PERFUME"

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**SOLD BY ALL LEADING DRUGGISTS**
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I'm giving this book free with orders for $2.00 worth of seeds — otherwise 25c, which will be refunded on first order. **It's worth more to you than all the text books in creation.**

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The Book of a Thousand Gardens

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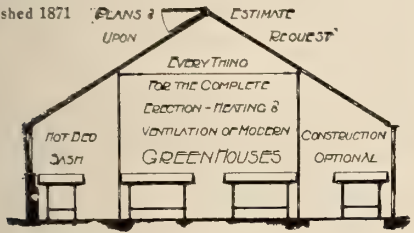
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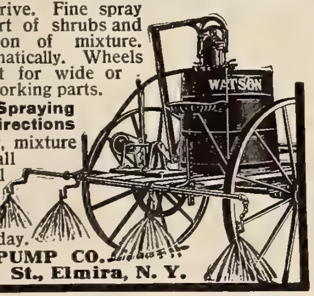

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DIRT SHELF

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***95% of all the impurity in milk gets in at milking time.***

You can't create purity, nor restore purity. But you can keep milk pure. Don't give it a chance to become contaminated. If you keep cows to supply your own table, give the

**STERILAC MILK PAIL**

a trial. Nothing like it ever perfected. You will notice the difference at once in the taste of the milk and its keeping qualities. If you are a dairyman, nothing you can do will so surely bring you a reputation for selling clean, wholesome milk products.

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Not only the one perfectly sanitary pail, but best in every way. Easily cleaned, has the right "hang" for pouring and handling, smooth as glass inside, very strong. Ask your dealer. If he can't supply you, we will send prepaid on **10 days' free trial. Price $2.50.** After trial, simply send us the money or the pail.

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**By Leroy Scott**

**Author of "To Him That Hath," etc.**

***Second Large Printing Now Ready***

We believe all thinking people will agree that we are now passing through the most dramatic period in the history of the civilized world. Whatever side you may personally incline to, you cannot help seeing that dozens of tremendous struggles are now in progress — the struggle of the small business man against the trust, of labor against capital, of women for a larger freedom, of the people for a more truly democratic government. These great problems of the present day, which vitally concern every man and woman of the nation, offer the most interesting and dramatic material for a story of the widest sort of appeal; nothing interests the average reader so much as stories springing out of the great problems of his daily life, provided they be presented intelligently, dramatically, humanly. In "The Counsel for the Defense," by Leroy Scott, we have produced a novel of this class that is worth your reading, and that has the qualities that will appeal to thousands. It is not merely a good story; it is, so critics declare, *a big story with a big idea.*

Furthermore, its success is not a matter yet to be proved: it has already succeeded. It has been a distinct hit as a serial in one of the big popular magazines; a theatrical manager has made a most flattering offer for its immediate production upon the stage; and an English publisher, who read the story in the magazine, has arranged to bring out the book in England, the first edition to be about 20,000 copies.

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**Danny's Own Story**

**By Don Marquis**

"One of the most amusing novels produced in a long time. It is like a draught of cool spring water on a dusty road to come across a book which is so refreshing in its humor and so close to the soil in its pictures of life."
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"There is fun and food a-plenty in Don Marquis's new novel. It is a tale full of the very victuals of human nature, served mostly in the gustiness of the open road where Life and Luck jostle by with their thousand drolleries; and, when you have finished the book, your reading appetite lolls and rubs its paunch and gets up with a good taste, warmed to the marrow."
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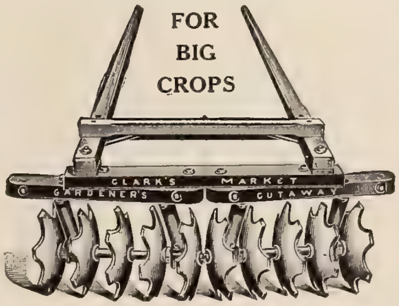
**Clark's Market Garden or Grove Harrow**



This harrow is used extensively by gardeners and truckers in the South and other vegetable growing sections. In Florida it is a great favorite for orchard cultivation.

Made light for shallow cultivation; cuts two to four inches deep if desired. No seat supplied unless ordered.

Made in three sizes:

**No. 0 1-horse, with 2 gangs of five 14 in. disks each**
**" 00 Lt. 2-horse, 2 gangs of six 14 " " "**
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No gardening equipment is complete without one or more of these harrows. Used on their experimental grounds at Garden City, L. I., N. Y., by the publishers of The Garden Magazine.

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A Germless Food Compartment

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It does away with cracks, joints, crevices, corners and other natural hiding places for dirt, odors, decaying food and dangerous microbes found in other refrigerators—the one *really sanitary* food compartment.

The "Monroe"

*A Lifetime Refrigerator*

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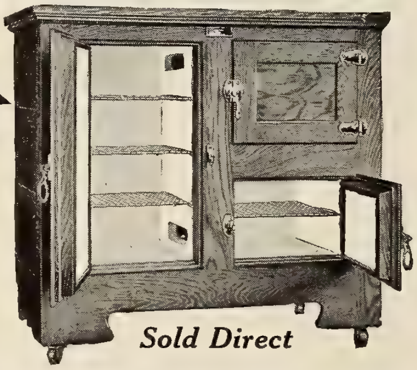
It tells you how to keep your food sweet and wholesome—how to cut down ice bills—what to seek and what to avoid in buying *any* refrigerator. It is packed with money-saving hints, and every housewife and home owner should have one. It tells all about the "MONROE"—describes its wonderful lining and the many other grand features that have given this refrigerator its position as the world's best.



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The "MONROE" is sold direct to you—at factory prices—on 30 days' trial. We pay the freight and guarantee "full satisfaction or money back." *Liberal Credit Terms if not convenient to pay cash.*

The "MONROE" is the **ONE REFRIGERATOR** with each food compartment made of a solid piece of unbreakable snow-white porcelain ware with every corner rounded as shown in above cut. The **ONE REFRIGERATOR** accepted in the best homes and leading hospitals. The **ONE REFRIGERATOR** that can be sterilized and made germlessly clean by simply wiping out with a damp cloth. The **ONE REFRIGERATOR** that will pay for itself many times over in a saving on ice bills, food waste and repairs. The **ONE REFRIGERATOR** with no single point neglected in its construction, and suitable to grace the most elaborate surroundings.

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Iron Railings, Wire Fences and Entrance Gates of all designs and for all purposes. Correspondence solicited: Catalogs furnished.

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Tennis Court Enclosures, Unclimbable Wire Mesh and Spiral Netting (Chain Link) Fences for Estate Boundaries and Industrial Properties—Lawn Furniture—Stable Fittings.

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Saves Work
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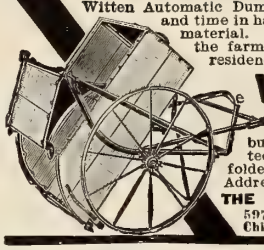
Witten Automatic Dump Cart saves labor and time in handling and moving material. Handiest thing on the farm, dairy, estate and residence. The



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Let us send you a few of different ages. Plant them with budding shrubs between and you will have Nature-pictures of exquisite contrast all summer. And when winter breaks the spirit of the flowering plants, the evergreens, undaunted, will relieve the bleak landscape with dashes of verdant color 'gainst the snow and frost.

All sizes from small, sturdy growths at $1 to magnificent specimens at $25.

You should have the Wagner Book, "Plants and Plans for Beautiful Surroundings." Write for it today.

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BOX 670, SIDNEY, OHIO

CALIFORNIA
DEPARTMENT

## California's Fertility: Is It Soil or Climate?

THE growing of vegetables and flowers for the seed market is becoming an important industry in California. Winter rains are copious and the general soil is retentive of moisture. The winter is mild; snow appearing on the mountains only. There are three or four months of summer without any rainfall. Sunny, dry weather with dew at night is favorable for bees and insects and the development of seed. Year before last Santa Clara County, alone, shipped 4,000,000 pounds of garden seed. When one considers the fineness of the average seed; that this is retailed by the ounce and small fractions of an ounce, then one can realize the vast number of customers this supplied. It is stated that California furnished 90 per cent. of the world's market for lettuce seed.

The Editor of THE GARDEN MAGAZINE has referred to the totally dissimilar conditions East and West of the Rockies, stating that as a general rule plants of Southern Europe, which refuse to grow in the Eastern States, will grow in the Pacific Coast States. Equally the native California plants with the exception of the California Poppy, are very hard to do anything with in the Eastern United States. "The alliance appears to be somewhat like this: Eastern United States corresponds to and grows plants similar to Japan and China. Western United States, Pacific Coast, plants similar to Europe generally."

I have been convinced from my experience with *Iris pavonia* that California's advantage in plant propagation has been in climate rather than in soil conditions. This tiny flower, whose recurved petals have the crisp whiteness of *Narcissus poeticus* is also known as the peacock iris, this name being given it because each petal is blotched with delicate shades of blue.

The first year after I planted it, a grasslike foliage came up and died down. The bulbs were new to me so I wrote to the eastern firm from whom I had purchased them, and was told that *Iris pavonia* is a native of Southern Europe, that it refused to naturalize and, moreover, defied experts.

Later, upon digging up the bed, the bulbs were found to be much larger than when they were planted. Some of the bulbs had easily split their outer shell and there within were bulbs of the size of peas and of about the size as originally received. The root growth was peculiar. Instead of being at the base, the roots branched out from the side of the spherical bulb like a white runner, and at the end some four to six inches away terminated into a well-sized bulblet. There was the solution—blooming sized bulbs had not been received. The bulbs were carefully planted again and the next season a prolific bloom followed of flowers two inches in diameter upon stems eight to ten inches long. The bulbs have continued to multiply both from division of the mother bulb and root terminal. There is some tendency for the flower to seed, indicating three different modes of propagation. The bed is of a heavy, sandy soil, well drained and in full sunshine. These bulbs appear to have responded to mild winter conditions as the root growth starts in the fall without watering.

Around San Francisco Bay and some other parts of California, the peony rarely flowers while the foliage will be luxuriant. In these localities the freezing point is reached but several times during the winter. In other parts heavy frosts prevail, also thin ice, and warm summers follow. There peonies do well. The explanation seems to be

**Suggestion No. III From the Advertising Suggestion Department**

EVERY business has its own story to tell. Why not take advantage of The Garden Magazine's tone and character and tell your "own story" by an anniversary or biographical sketch in the advertising pages? We practically live with our readers and will be glad to enlist this intimate acquaintance in your service. We know how to present your side so that it will interest our side. Send the requisite information and we will submit free an advertisement of this order.

**Write Jay Vee**
**The Advertising Suggestion Department**
**Doubleday, Page & Co., Garden City, N.Y.**

***For a Most Beautiful Lawn***

Sow **KALAKA.** It is specially selected, specially tested grass seed, and pulverized manure—the ideal combination to grow quick, hardy, lasting turf. For seeding new lawns or putting new life into the old lawn nothing equals

**KALAKA** *Fertilized grass seed*

Packed in 5 pound boxes at $1.00 per box, express paid *east*, or $1.25 *west* of Omaha. Write and ask for prices on special mixtures for special locations and purposes. Order today and have the best seed money can buy. Get our *free* lawn book.

**THE KALAKA CO., 14 Union Stock Yards, Chicago**

**ORCHIDS**

Largest importers and growers of Orchids in the United States

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Orchid Growers and Importers SUMMIT, N. J.

**Fairfax Roses** Unusually well-bred and well-grown; will succeed anywhere. Free Catalogue tells all about them.

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**Landscape Gardening**

Prof. Craig

A course for Home-makers and Gardeners taught by Prof. Craig and Prof. Beal, of Cornell University.

Gardeners who understand up-to-date methods and practice are in demand for the best positions.

A knowledge of Landscape Gardening is indispensable to those who would have the pleasantest homes.

**250 page catalogue free. Write today.**

THE HOME CORRESPONDENCE SCHOOL

Dept. G. Springfield, Mass.

A Highway of Perennials

**THE HIGHWAY TO PERENNIALS**

*Leads straight to the*

**Palisades Nurseries**

THERE you will find all kinds and you can take your pick from the best that grow. Perennials add a feeling of permanency to your home surroundings. They change their plumage but not their face and keep reflecting the seasons all the year around.

No grounds are really gardened without a big showing in perennials. We are headquarters for perennials and assure the widest latitude in choice as well as the most courteous promptitude in correspondence and service. Our motto—Maximum Quality at Minimum Cost. Write

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**HIGHEST QUALITY**

**Insect Pest Destroyer!**

Easy to mix—sure to kill. Death to all leaf-eating insects. Save your trees, fruits and vegetables. Put up in paste or dry form. (Conforms to the National Insecticide Act of 1910.)

***Be Sure and Ask for SWIFT'S***

and thus always secure GUARANTEED HIGHEST QUALITY.

**FOR SALE BY LEADING DEALERS EVERYWHERE**

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Send for Circular. **30 Broad Street, Boston, Mass.**

**WEIGHTED WITH WATER**

A lawn roller whose weight can be adjusted to the conditions of your lawn, garden, tennis court or driveway.

**All in One**
- A light Machine for the soft, wet spring lawn.
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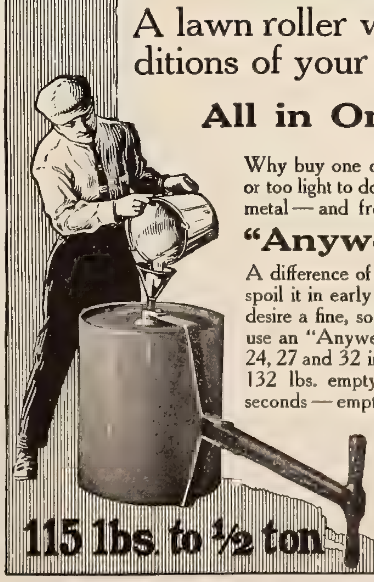


Why buy one of the old style iron or cement fixed-weight rollers that is generally too heavy or too light to do your lawn the most good, paying for two or three hundred pounds of useless metal—and freight on it as well—when less money will buy the better, more efficient

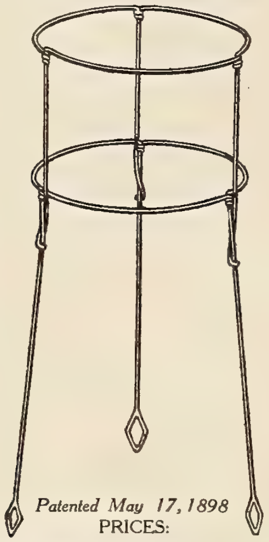
**"Anyweight" Water Ballast Lawn Roller**

A difference of 50 pounds may mean success or ruin to your lawn—a half-ton machine will spoil it in early spring, while a 200 lb. roller is absolutely useless later in the season. If you desire a fine, soft, springy turf of deep green, instead of a coarse, dead looking patch of grass, use an "Anyweight" Water Ballast Roller—built in 3 sizes, all of 24 inch diameter and of 24, 27 and 32 inch widths. Drums boiler riveted or acetylene welded. Weight 115-124 or 132 lbs. empty—from that "anyweight" up to half a ton when ballasted. Filled in 30 seconds—emptied in a jiffy. Runs easy—lasts a lifetime.

**This book sent Free:** We will mail you postpaid, our valuable and interesting book on "The Care of the Lawn" together with folder about the "anyweight." Write us today. Save money—save your lawn.

**Wilder Strong Implement Co., Box 6, Monroe, Mich.**

**The Model Plant Support**
**For Tomatoes, Peonies, Dahlias, Golden Glow, Chrysanthemums, etc.**



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*MADE STRONG AND LIGHT OF HEAVY GALVANIZED WIRE*

*Patented May 17, 1898*
PRICES:
Per dozen, $1.75; per 50, $7.50; per 100, $12.50
A Lighter Support is also made for Carnations
50 Complete Supports, $2.25; 100 Complete Supports, $3.50
**Flower Bed Guards, Trellis, Lawn Guards.**
**Send for Price List and Catalogue of our Full Line of Flower Supports**
**IGOE BROTHERS** 67-71 Metropolitan Avenue, Brooklyn, N. Y.

**Simmons Hose Reels**

Save time and money. Besides, its spiral wind **protects life of hose indefinitely.** Also neat and compact with efficient lawn-sprinkler combined.
**Each, $4.00 net**

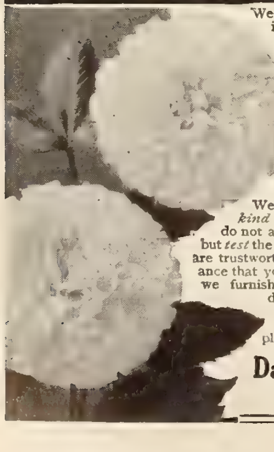
**Garden Hose**

that stands the test of time. None but pure rubber and best fabric used in its construction. **Buy direct and save unnecessary profits.**

**Price, including Nozzle and Couplings, complete, 10 cents per foot net.**

**John Simmons Co.**
**104-110 Centre Street**
**NEW YORK CITY**

**The World's Largest Dahlia Growers**



We have not come to that position in a day, but through many years of steady growth; our establishment now occupies 80 acres solidly planted in Dahlias in 1911. Here we grow, test, *experiment* with Dahlias, producing the choicest types, in leading standard varieties.

**ASSURE SATISFACTION BY PLANTING HERBERT'S DAHLIAS**

We have the Dahlias you need—the *kind* of plants, and the *quality*. We do not accept the word of other growers, but *test* the varieties we sell so we *know* they are trustworthy. This method is an assurance that you will be pleased with the stock we furnish. Get our handsome Catalog, describing Dahlias, Gladioli, Cannas, and Hardy Phlox. It's yours, free, if you write *now*—planting time is close by.

**David Herbert & Son**
**Box 401, Atco, N. J.**

that root growth is checked by the cold of winter which seems necessary for the flower bud development.

### IMPORTANCE OF GOOD SOIL

The University of California has just completed a three years' experiment upon "Soil and Climatic Factors Influencing the Composition of Wheat" (Bulletin No. 216). Soil was taken from Maryland and Kansas. From the latter state the soil was taken in layers of six inches to a depth of three feet and were replaced in California in the same order as obtained so that the bottom soil would occupy the same position it did in Kansas. This was placed in a hole lined with cement so as to prevent lateral root growth. A similar plot was dug alongside in the California soil, the hole lined and soil replaced so as to make exact conditions. Then wheat native from each place was planted in a similar position in each one of the plots. From the "results it would appear that a normal soil has little, if any, influence upon the nitrogen content of the wheat kernel, but that climatic factors are the controlling ones" and furthermore that "it seems quite certain that the soil nitrogen content has very little, if any, direct influence upon the nitrogen content of grain grown upon such soil, and that some climatic factor is sufficient to entirely overshadow the soil factor. It may be that certain physical factors enabling the soil to hold moisture better at certain periods of the plant's growth are responsible for the difference."

My experience would indicate importance of soil only so far as concerned its physical factor for holding or releasing moisture. Soil must contain a certain amount of fertility — plant food — but over and above this food necessity, climate seems to control the result. Italian and Portuguese truck gardeners will take sand dunes, even salt water beach sand, level them off, and, with green manure and water, change a desert into an oasis of vegetables. The manure seems to act more as a mulch than as a fertilizer. In many instances it would seem that water is the only factor. In our great valleys, vast stretches of barren land lay sparse of vegetation although winter rains are abundant; yet with the introduction of irrigating systems, they have been transformed into diversified productivity. Again, in sections of Oakland where there is sandy soil, so porous that no matter how copious be the watering or rain, it immediately sinks into the soil, irises of the Siberian and Spanish types will reseed themselves. Iris do well in all sections, but will not reseed. This appears due to the physical nature of the soil as related to climate conditions rather than to fertility. The cineraria is sensitive to frosts, yet protected by a shady place such as on the north side of a house and in a heavy clay soil, called adobe, it will run riot in both bloom and reseeding, in the winter season. It is not so in sandy soil. Geraniums, pelargoniums, nasturtiums and sweet peas hardly require the scratching of the ground to take root. The first two will grow on the rubbish heap and the first in the most sterile potter's clay. Once plant nasturtiums and one is ever after getting rid of them. Last summer we found perfect specimens of sweet peas, with stems ten to twelve inches long averaging four flowers, which had grown in an adjoining lot having been pitched there with the previous year's vines. The calla lily bulb seemingly can be broken into a thousand parts and each will grow. These seem to thrive on climate.

### TWO CROPS OF ROSES

Portland, Ore., is often called the "Rose City." Their wealth of bloom is in May and June. We plant mostly Hybrid Perpetuals because the winters are severe and rains continuous. In California, all types flourish. Flowers may be picked the year around, especially if some summer and fall irrigating is done. Many follow the practice of no pruning other than by the picking of long stems with the flowers. Again, irrigating is withheld from bush roses from the last of June until the first of September; then the tops are cut off to about eighteen inches of the ground, depending upon the variety. Manure is applied and this followed by a good watering occasionally. Then fine blooms may be had for Thanksgiving and Christmas. This latter method gives two

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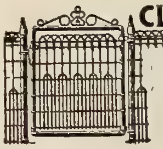

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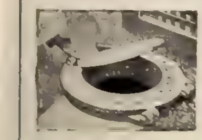

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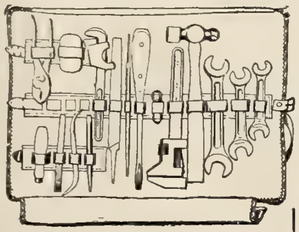

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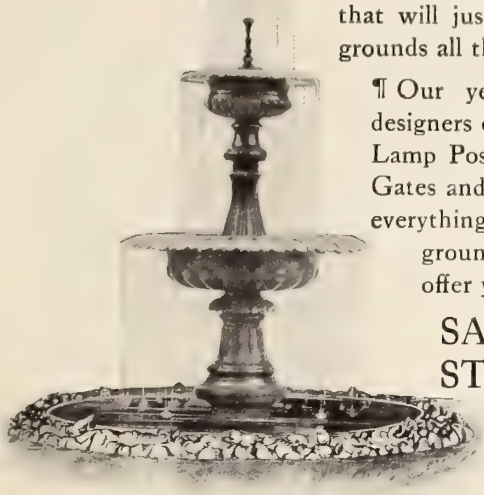

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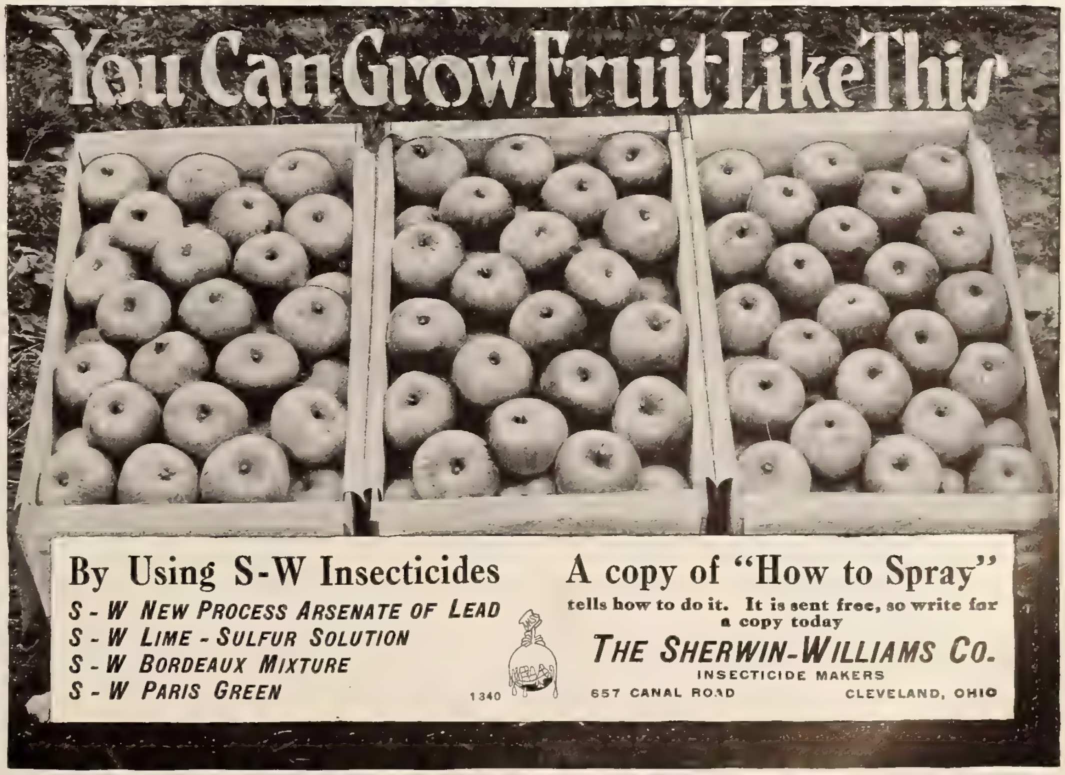

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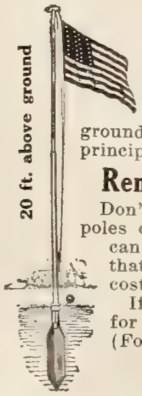

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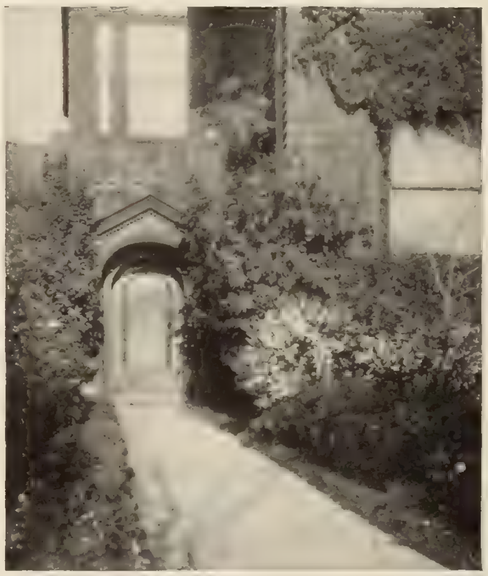
distinct crops in a year. Ulrich Brunner, Frau Karl Druschki, Caroline Testout, Hugh Dickson and many Teas are especially responsive to winter crops. Heavy soil and climate seem to be the necessity. Ordinary rains are not detrimental. The manure serves as a mulch; otherwise, the adobe soil quickly crusts over and cakes.

This discussion indicates that climate is the important factor; next water, as moisture; and thirdly, soil, in its physical or mechanical properties rather than its nutriment. In placing nutriment last, I am inclined to the theory that in root growth a plant excretes or throws off substance poisonous to itself. The action of fertilizers, or rotation of crops, neutralizes or causes the soil to become neutralized to such poisons. More damage is done with fertilizers than without; there is a medium. Successful gardening means a study of each plant to find its "climate" — its exposure requirements, indoors or out; also its water or moisture necessities.

California. GEO. B. FURNISS.

## Making Gardens Between Houses

IN VERY large cities, the space between houses is so narrow that it is usually cemented over and does not give any opportunity for the gardener's art. But in small cities and suburban towns where the space between houses is never less than twelve feet, we have a fine opportunity for beautiful effects. But a casual glance will reveal that not one owner in fifty has done more than try to raise some sickly-looking grass or plant a long stiff rows of callas. The front of the house may be artistically planted with shrubs and annuals, but the space at the side is dreary and uninteresting.



Fuchsia, diosma, Wichuraiana rose and thrift were used in this side space

Some imagine that, because the space is in the shade of two houses, nothing will grow there, but there are many trees, vines, shrubs, and annuals which will grow luxuriantly in just such a situation. Here is an excellent opportunity for a hardy perennial border, for there are many perennials which do well in semi-shade. Acanthus and woodwardia ferns make an excellent greenery for planting in with foxgloves, German and English iris, wallflowers, St. John's wort, calceolarias, lantanas and aquilegia. If the shade is not too deep, hollyhocks, Shasta daisies, golden glow, and brown-eyed Susans will do well.

On many of the side plats in this city, a bare board fence divides the front and back yards. This offers a support for vines. Any of the ivies will do well; English ivy is so rampant, however, that it becomes a nuisance when planted near the house. Boston ivy and Virginia creeper, *Meuhlenbeckia complexa*, honeysuckles, jasmine (both white and yellow), wistaria, and white Banksia

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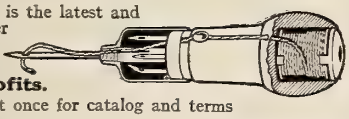

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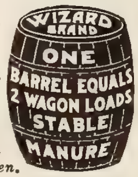
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ONE BARREL EQUALS 2 WAGON LOADS STABLE MANURE

roses are all suitable and thrifty growers. For quick growth nasturtiums and *Cobœa scandens* will do well. A tall shrub or low growing tree in front of the fence serves to break up the long line and gives an interesting point upon which the eyes may rest. In front of this low shrubbery, annuals and bulbs may be placed.

One charming "between-houses" garden had the board fence covered with Hall's honeysuckle, Virginia creeper, and Meuhlenbeckia, which being evergreen all the year, combined well with the Virginia creeper which is so bare in winter. Planted against the fence was *Arundo donax*, serving to break the long space; in front of this were bambusa and woodwardia ferns, intermingled with pink and white single hollyhocks and foxgloves, before which were clumps of white iris, ferns, and acanthus. In the foreground were white feverfew, *Scilla Sibirica*, *Narcissus poeticus*, and daffodils. This combination might be infinitely varied for other situations; laburnum, white paper birch, *Pittosporum eugenoides* or *Escallonia rubra* might take the place of the arundo. *Cytisus proliferus*, var. *alba*, though not particularly choice, has the merit of being in bloom nearly the whole year. If this were chosen, a bed of blue and white aquilegia, foxglove, and narcissus would be a thing of beauty in the spring. If one desires a yellow color effect, calceolarias with lantana, wallflowers, daffodils and primulas are good.

Fuchsias, in variety, make an ideal garden. The tall old fashioned red fuchsia forms an excellent background. It is, however, like English ivy, somewhat of a nuisance when well established. Its suckers have been known to run thirty feet under a house and come out on the other side. If it is kept well pruned, however, it is all right. If used for a background, the foreground may be made up of Storm King and Baby fuchsias.

Another treatment of a side space is to plant it so thickly as to form a carpet. Honeysuckle and St. John's wort lend themselves to this. Our native sand strawberry and mesembryanthemums are sure to grow in any soil and situation, soon forming a thick growth. Tradescantia will grow in the deepest shade and is especially fine where the space is narrow and few other things will grow. The dainty white periwinkle is also pretty in leaf and flower, but unless one wishes endless trouble, do not plant the large-leaved, blue-flowered variety. It simply takes possession and crowds out everything else.

For luxuriant and pleasing growth there is nothing finer than native shrubs most of which, in their native haunts, grow in northern exposures. One of the daintiest of these is the wild currant, with its fine fringe of pink flowers in early February. There is no situation too shady for this, provided it has plenty of water. The wild plum, Islay cherry, tassel tree, dogwood and calycanthus all will flourish and give a well kept air to the barest and ugliest space. The beauty of these shrubs is that they need very little care beyond an occasional pruning and thinning out.

California. LELA ANGIER.

## Making "Pin Money" from Seedlings

LAST spring, when I sowed my seeds for my own garden, a neighbor requested that I grow her some aster plants to the proper size for setting out. This gave me an idea: Why not grow more plants for other neighbors, solicit a little trade, and see what I could do toward earning some pin money? Every year I had some extra plants which were either given, or thrown away, and I then and there determined to make those extra plants pay for their existence.

My stock in trade consisted of ample space for working, a dozen or so empty flat boxes, some good soil, a small quantity of sheep manure, and at least two hours of leisure each day. Besides these things I had about two dozen packages of seed which I had already ordered, the price of which amounted to $3.20. Since my capital was practically nil and I dared not venture very deeply into the business, I determined to see what I could make out of this investment without further outlay.

The first thing was to prepare the boxes for

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HICKS NURSERIES
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It will prove an afternoon of keen pleasures for you, besides being a very practical way to see for yourself just *how* the different plants, shrubs, and trees look when in foliage and bloom. It simplifies wonderfully your selection for planting, by clearing all doubts away. Our nursery is on the Jericho Turnpike at Westbury, Long Island, which is easily accessible from New York, via the bridges, or from Connecticut and along the Sound by the Sea Cliff ferry. Such a visit will be doubly enjoyable if you have previously looked through this new catalog. If you must disappoint yourself by not coming, send for the catalog just the same. It's the next best to coming.

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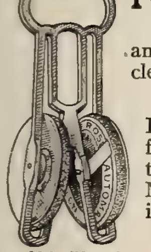

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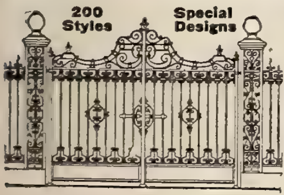

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*See detail advertisement on page 233*

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Country home owners, farmers, and city business men find it the handiest light-hauling and quick-delivery wagon made. Detailed statements of work capacity and comparative cost together with catalogue of the car, will be mailed on request.

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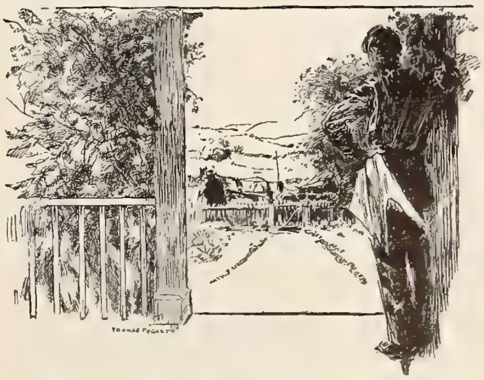
# *David Grayson*



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ARE THE **BIGGEST PAYERS Because** THEY HAVE PROVEN TO BE THE **BIGGEST WINTER LAYERS**

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Are the GRANDEST UTILITY birds on record today, and as to their FANCY QUALITY they won first at Madison Square Garden, New York, 1905, 1906, 1907, 1908, 1909, 1910; also at Crystal Palace, London, England, and Chicago and Boston. If you need some birds to IMPROVE YOUR STOCK or for the SHOW ROOM write us. We have them, and the KIND THAT WINS, as our past record shows. STOCK and EGGS for sale at all times. Remember, we are the ORIGINATORS of "CRYSTAL" White Orpingtons, and breed only the one kind. We devote our whole time to this one breed.

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the seed. The few extra boxes I needed, besides those I had on hand, were kindly supplied to me by my grocer. For lack of benches the boxes were placed flat on the ground, or on other boxes. I was not overly particular about the soil in the bottom of the boxes, simply mixing with it a small amount of manure. I took the precaution, however, to screen the top soil to the depth of about two or three inches.

Then came the planting. Since I had only a limited quantity of seed, I decided to sow it very thinly in shallow drills. It would have been easier of course, to have sown it thickly and then thinned out the seedlings afterward, but I wanted to make every seed count. Two packages of pansy seed were the first sown and all the seeds germinated well. Then columbine followed, larkspur, Shasta daisies, and pinks. My columbines were very slow in coming up but, once they had appeared they grew rapidly.

I aimed to get at least half my seed into the ground as early as possible so that I might not have more work than I could handle when it came time for the transplanting. In March I sowed first a package of gaillardia seed, then one of coreopsis, and then three varieties of cosmos. Toward the last of the month salvia and aster seeds were planted.

After all my seeds were finally in the boxes and some were far on the road to becoming real plants, I began my campaign for selling. At first I spoke to my friends about my plants and received from them many orders. But I soon found that only my annuals were selling. The reason was that most of the perennials were only names to my friends, and even when they actually knew the flowers themselves, they did not connect the names with them. Something was needed to educate the public!

I had in my own garden some plants of the long-spurred yellow columbine, a fine bed of Shasta daisies, gaillardias, and some coreopsis. During the month of April, the columbines, gaillardias, and Shasta daisies all came into bloom. I picked the choicest of their blooms, placed them on exhibition in a bookstore window, and put with them a notice that good plants for setting out would be furnished on certain dates, the plants being guaranteed to give similar blooms the following year. My name, address, and telephone number were printed on the card and it was not long before the orders began to come in. Before the end of the season I had sold all my plants but I could promise that more orders would be filled in the fall.

For in the meantime I had worked steadily with my seedlings. As soon as they became crowded in the boxes I set them out into a square of open ground. In this way they received good growth and even the weak plants were given a chance. Whenever possible I tried to sell them late in the afternoon so that they would have the night in which to recover from their change of place. In selling the plants or delivering them, I put them into rather heavy pasteboard boxes. In a few cases I sold them in small fruit boxes.

### RETURNS FROM ONE SEASON

My active season of work lasted from February 15th to May 15th, three months, and during that time I took in, as nearly as I could figure, $79.65. My original outlay was $3.20 and subsequent ones were no more than $5 so that I had, in round numbers, $70 to represent my three months' labor. When I consider the small amount of time spent upon the work, and my lack of experience in many details, I am convinced that my plants of that spring paid for their existence.

Here is a tabulated account of one season's labor:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Asters, | 6 | pkgs. | $ .60 | 24 | doz. plants, | $ .35 | $ 8.40 |
| " | 3 | " | .75 | 12 | " " | .50 | 6.00 |
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| Shasta daisy, | 1 | pkg. | .10 | 6 | " " | 1.00 | 6.00 |
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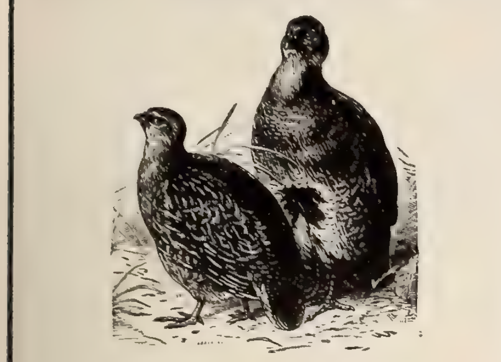
| Pinks, | 1 | pkg. | .05 | 4 | " " | 1.00 | 4.00 |
| Salvia, | 1 | " | .10 | 5 | " " | 1.00 | 5.00 |
| Larkspur, | 1 | " | .25 | 5 | " " | 1.00 | 5.00 |
| Coreopsis, | 1 | " | .10 | 10 | " " | 1.00 | 10.00 |
| Gaillardia, | 1 | " | .10 | 6 | " " | 1.00 | 6.00 |
| Columbine, | 3 | " | .45 | 20 | " " | 1.00 | 20.00 |
| | | | $3.20 | | | | $79.65 |

California. W. W.



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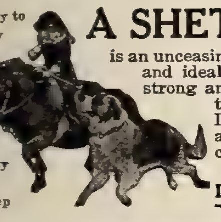

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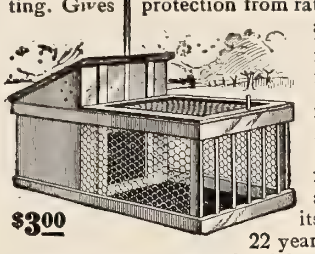

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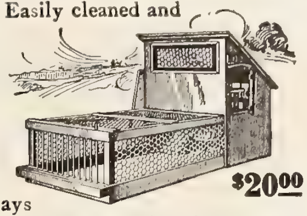

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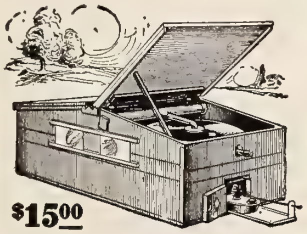

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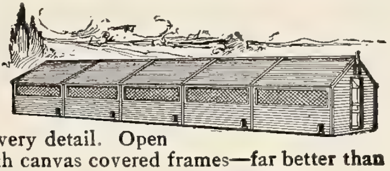

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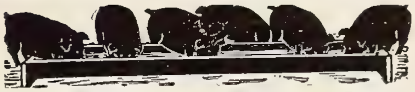

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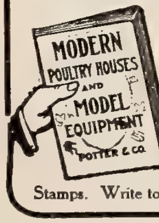

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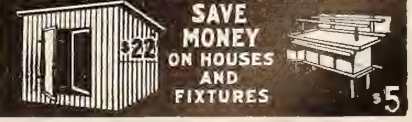

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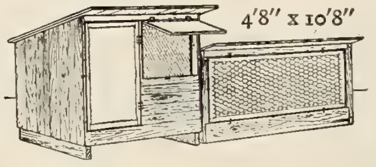

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## How to Make a Rubber Plant Branch

THE quickest way to induce a rubber plant to branch is to cut it down to within a foot or fifteen inches of the ground. New shoots, which will appear in a short time, will transform the stub into a shapely, round-headed tree. You can also check the growth of the old plant by pinching out the top bud. Another thing is to make a slanting cut in the stem so that when cut off the top will make a symmetrical plant. Put a small piece of wood or charcoal in the cut to keep it open. Over the cut lay some damp sphagnum moss; be sure that it is always damp, but do not let it become too wet or it will get sour.

In a few weeks new roots will be seen protruding from the moss. When a mass of roots has been produced cut off the stem below the moss and pot the plant, moss and all, in a good potting soil. Put it in a shaded place for a few days until the roots have taken hold of the soil.

The YOUNG PEOPLE'S CLUB

## Do You Want Help?

DEAR GARDENING FOLK:

THE GARDEN MAGAZINE wants every boy and girl to know a great deal about plants and to enjoy having a garden. This is not easy, but THE GARDEN MAGAZINE has entrusted me with the task; and I mean to help you girls and boys to grow the nicest flowers and the largest vegetables, this summer, that you have ever grown.

To have a really nice garden, you need: first, the desire to have it; second, the ability to work patiently in sun or rain; and third, good seed and sturdy plants to cultivate. Everywhere boys and girls are wondering how and where they are going to obtain money to help them to make their gardens this summer.

I want all boys and girls who love gardening (and all teachers and mothers who like to help them to have a garden of their own) to join me in forming our Garden Club. Every boy and girl in the whole country may become a member of this club by writing to me and telling me just why they want a garden. Then I will tell them by letter the best way to have one. I cannot tell it through the pages of the magazine, because it would take up too much space. We will have good times together by writing letters to each other about our gardens.

Besides this, I have a lovely book on flowers as a gift for boys and girls who become members. School days will soon be over and we will have lots of time to plant and dig. It will be great fun to have garden contests all through the summer and in the fall we will see who has grown the very nicest flowers and the largest vegetables. What will happen then, I cannot tell you now, but it will be something nice you may be sure. So write me this very day for membership in our club and let me tell you how to earn all the money you want for your gardening. Remember, it does not cost anything to become a member.

Yours for a nice garden,
LADY GREENSLEEVES.
Young People's Garden Club,
THE GARDEN MAGAZINE,
Garden City, N. Y.

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Proof against rain, snow, sun, wind, heat, cold, sparks, alkalis, acids — everything that harms ordinary roofs. Get the roofing made of Nature's perfect weather-proofer —

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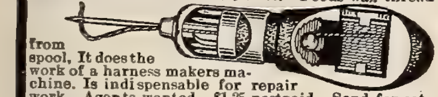

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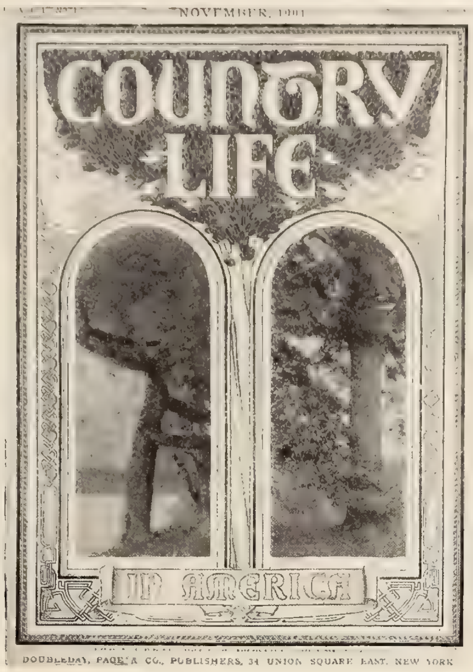
NOVEMBER, 1901
COUNTRY LIFE
IN AMERICA
DOUBLEDAY, PAGE & CO., PUBLISHERS, 34 UNION SQUARE EAST, NEW YORK

*The First Country Life Cover*

# Country Life has a Birthday

Ten years ago COUNTRY LIFE IN AMERICA was born. No magazine had ever been made that was like it and some people said it would not be welcomed—but it was.

It has just issued a Birthday Number with a not too modest autobiography of itself. And yet:

(1) Country Life started a whole new field of out-of-door periodicals.
(2) It developed a new and most delightful field of advertising; real estate, horses and dogs and chickens, rugs and antique furniture, nursery stock and garden tools, out-of-doors furniture and building wares and many other things attractively illustrated.
(3) It started poor men and rich men spending money on country living which they never regretted.

It grows stronger and better, year by year.

We want to introduce Country Life to new friends as it begins its second ten years, and we are printing here, as a note of introduction for you to clip and mail, this coupon

***A Birthday Offer of a Six Issue Subscription for One Dollar.***

G. M.

DOUBLEDAY,
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GARDEN CITY, N. Y.

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PARIS GARTERS
No Metal Can Touch You
Tailored to Fit the Leg
25 Cents
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## The Proper Way to Trench

Digging and trenching must be done in either the fall or spring, when the beds or borders are vacant. Do it in the spring, if possible, before heavy rains saturate the ground, especially if the soil is heavy, as rain and slight frost are valuable ameliorators of such soils when in a roughly dug state.

Digging is the turning over of soil one spade (or spit) deep, and is suitable only for well worked soils. If soil is never dug deeper than that, growth will be restricted, because the plants can only gather food to that depth.

Trenching is the turning over of the soil two or more spits deep. Where time and circumstances permit, trench three spits deep. This is "deep" trenching and is essential to the cultivation of prize flowers and vegetables, but "bastard" trenching, two spits deep, will work marvels on badly tilled soil. By stirring the soil we let in air and water, and at the same time provide better drainage, rendering the soil warmer in winter and moister in summer.

When trenching be careful not to bury the top soil and bring the lower or sub-soil to the surface. The lower soil in untrenched ground is inert and sour and needs aerating. Correct trenching does this, leaving the top soil still at the top and the bottom soil below.

If it is a large plot, open a trench across one end two feet wide and one spit deep, put the soil in a wheelbarrow and cart it to the other end of the plot and place it on the path or in some place where the soil is not to be dug. It will be wanted for filling in the last trench. Or else the work can be lessened by halving the plot lengthwise and taking out the trench across one section only; depositing the removed soil just off the adjacent strip where the work of trenching will end. The plot can also be quartered on the same lines if it is of great width, a short trench being less tiring to work than a long one. Having got out the first trench, stand in the bottom, take out another one foot wide and one spit deep, and form a second heap with the soil near where the trenching will end. We have now a step-like arrangement — surface; trench one spade deep; trench two spades deep.

To deep trench the soil, take a fork and dig up the bottom of the lowest trench to the full depth of the tines; this done, a layer of any vegetable refuse or a strawy manure can be spread over the dug surface. Now stand on the step above and proceed to turn the soil over on to the refuse. This finished, spread another layer of manure over the new surface. We have now reversed the step arrangement; in front is a trench two spits deep, at the back is a step of dug soil having a refuse layer sandwiched below it and a layer of manure above waiting to be covered. We now mark out on the plot another strip a foot wide and commence to dig this up and throw on to the top of the manure lying on the removed soil in the first trench. This done, we find we have trenched a one-foot-wide strip of our plot to the depth of three feet and double manured it, and that we have now the step-like arrangement of trenches waiting for a repetition of the operations. By repeating this process we slowly, but surely and thoroughly, work our way to the end of the plot.

New or little used spades and forks should be used in order that the full depth of soil be lifted each time. Clay soils are best attended to in early winter, and the surface left as rough as possible for frost to act upon; light soils are best trenched in early spring. Also, in the case of light soils, do not manure the bottom trench, but between the upper and lower spits and on the surface. This is because of the greater freedom with which water filters through light soil, carrying away with it manurial properties. Pigsty and cow-shed manure are best for light soils, and stable manure for heavy ones.

Vegetable gardens should be so arranged that a third of the area is trenched annually, the whole being thus turned over two spits deep every three years. Herbaceous borders can have similar treatment by lifting the occupants, placing on a square plot close together, covering with mats, etc., if necessary, trenching and manuring the soil, and then replanting.

Canada. W. R. Gilbert.

# Young People's Garden Club

To Encourage Gardening among Boys and Girls

Mothers, Teachers, Club Women and all Boys and Girls Invited to Join.

## Membership Free

Why not enjoy your Garden?

*Write to*

Betty Green, Sec'y, Young People's Garden Club
The Garden Magazine, Garden City, N. Y.

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**SUNSHINE**

Send 10 cents in stamps (to pay return postage) and receive our **Revelation Box** containing 14 varieties of delicious Sunshine Biscuits.

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**40 cts.** in postage stamps together with the name of your dealer will bring you, postpaid, direct from the manufacturer, a fresh sample brick of

**Lambert's Pure Culture MUSHROOM SPAWN**

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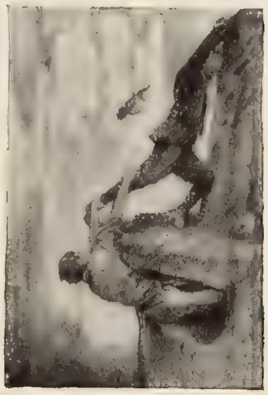
*A South Seas Tale of Adventure*



THE STRUGGLE ON THE CLIFF

## The White Waterfall

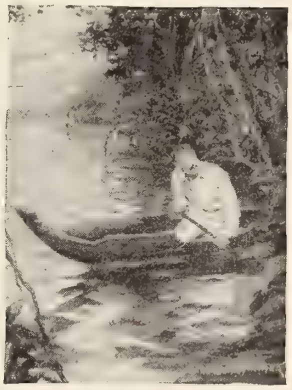
**By James Francis Dwyer**

IF YOU like to "get out of yourself" for a few hours and enjoy the excitement and thrill of adventures afloat and ashore, then get a copy of "The White Waterfall." The tale takes in the fortunes of an old professor and his two daughters on board the *Waif*, a staunch little craft which pokes her nose into the South Seas in search of an island reputed to contain great archæological treasures. How the professor is duped by the man who pretends to guide him, how a first mate is shipped at one of the islands who changes the course of events, along with a native who has a curious rhyme about a white waterfall, are all parts of a tale that is too good to spoil by piecemeal telling. **(Ready about May 15th)**

*Illustrated with four full pages, head and tail-pieces and decorations by Chas. Chapman*
*Fixed Price,* $1.20 (*postage* 12c.)

## A Son of the Sun

**By Jack London**



THESE are good red-blooded tales of the South Sea Islands as Jack London knows how to tell them. David Grief, the man about whom these yarns are spun was once a light-haired, blue-eyed youth who came from England to the South Seas in search of adventures. The life threw its spell over him and he remained. Tanned like a native and as lithe as a tiger, he became a real son of the sun.

David Grief has amassed great wealth, not because he sought it, but because fate smiled on the man who cared nothing for gold, but loved the adventure and the peril of snatching it when the odds were all against him. He played the game for the pure joy of it, liking it best when the risk of life and limb was greatest, and biding his time with infinite patience till the chance came to recoup his losses.

And the chance always seemed to come — perhaps because he was willing to wait — perhaps because he was resourceful. It is the adventures of this man which Mr. London tells with such vivid and impressionistic pictures of the Southern Seas. **(Ready about May 15th)**

*Four illustrations in black and white by A. O. Fischer and C. W. Ashley. Fixed price* $1.20 (*postage* 12c.)

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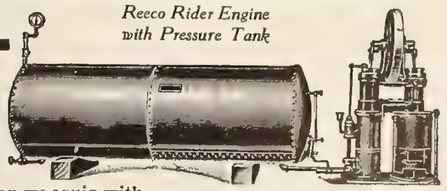

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has taken the greatest photographs ever made of the wild Newfoundland caribou, of which the picture reproduced below is a good example. It took six years of patient waiting to get these photographs. Again and again this intrepid camera-hunter visited Newfoundland and lived for days at a time in a blind, but never until last fall was he fully successful in securing what he sought. He tells the stirring story of it in

**For May 15th** Country Life in America **For May 15th**

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Copyright, 1912, by A. Radclyffe Dugmore

The Landing of the Herd

Photograph by A. Radclyffe Dugmore, author of "Camera Adventures in the African Wilds," "Nature and the Camera," etc.

**At the news stands, 25 cents a copy. Subscription, $4 a year, postpaid.**

DOUBLEDAY, PAGE & COMPANY, Garden City, New York

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We have also the best of all other varieties—Teas, Hybrid Perpetual, Moss, Damask, Austrian Briars, Hybrid Sweet Briars, Wichuraiana Hybrids, Ramblers, Baby Ramblers, Bengal, Bourbon Roses, etc.

**Dreer's Garden Book** in which these roses are fully described and some color-plated is free to anyone mentioning this publication. Contains 288 pages, over 1000 photo-reproductions, 4 color pages and 6 duotone plates. It is an invaluable aid to both amateurs and professionals. Full of reliable information on all subjects pertaining to the garden. Lists practically every dependable flower or vegetable grown, with explicit and easy cultural directions written by experts. *Write today.*

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**The Smallest Garden Needs a Spray Pump**

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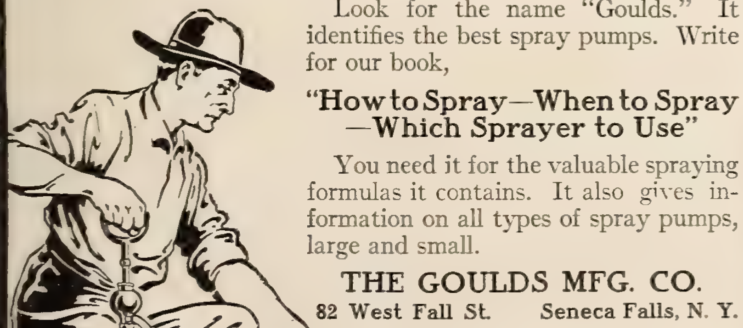

**FIRST PRIZE**
**International Rose Exhibition**
**Paris, June, 1911**

**Jonkheer J. L. Mock**

Jonkheer J. L. Mock Rose

This picture shows the International Rose Jury, in the Bagatelle Gardens, Paris, last June. This jury, composed of distinguished rose culturists from many countries, was appointed by the Prefect of the Seine. Our president, Mr. Robert Pyle, was the sole American member of the jury, an indication of the international prominence attained by The Conard & Jones Company as rose growers. Mr. Pyle stands at the left. Next to him is England's representative, and next, the German expert.

**Jonkheer J. L. Mock Rose** has been awarded two Gold Medals, one Silver Medal and other honors. A magnificent variety. Brilliant carmine, shading to imperial pink. The large, symmetrical, highly perfumed blooms are produced in great profusion and are carried on stiff, erect stems. The bush growth is vigorous and free. By all means add this rose to your collection.

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*$5.00 orders delivered free*

In any event, write for our new catalogue of "The Best Roses for America," including valuable data for rose lovers. FREE.

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The Old Colony is the highest achievement attained in silver plated ware. The design possesses individuality without sacrifice of simplicity or purity of outline. The pierced handle deserves especial attention. Appropriate for any time and place, it is pre-eminently fitted for Colonial and Old English dining rooms. Like all

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THE COUNTRY LIFE PRESS GARDEN CITY, NEW YORK

JUNE
1912
Vol. XV. No. 5

## Perennials For All Purposes

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# THE GARDEN MAGAZINE

COUNTRY LIFE IN AMERICA

DOUBLEDAY, PAGE & CO.
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THE WORLD'S WORK

# BOBBINK & ATKINS

## World's Choicest Nursery and Greenhouse Products

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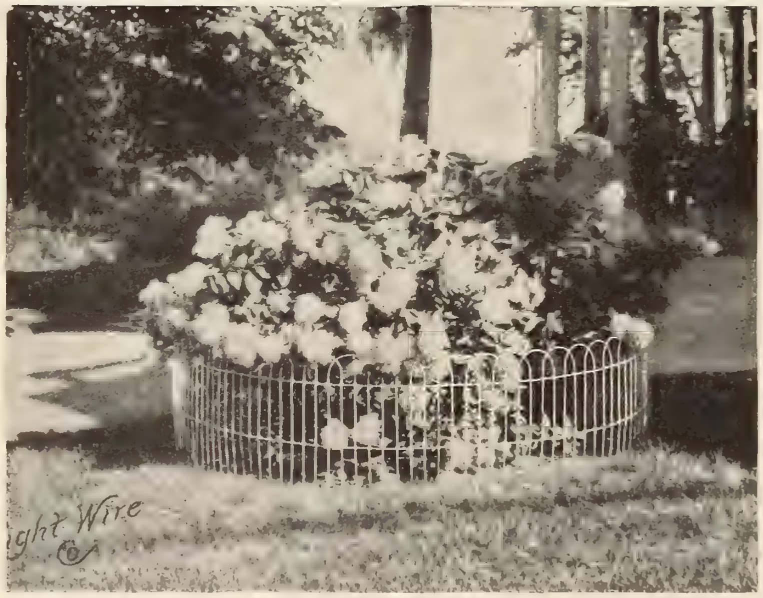

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OUTLINE your flower beds with ornamental wire guards. Add to the trim beauty of your place, and at the same time keep off trespassers. There is only one kind of wire guard, trellis or fence that will stand for years and never rust. That is

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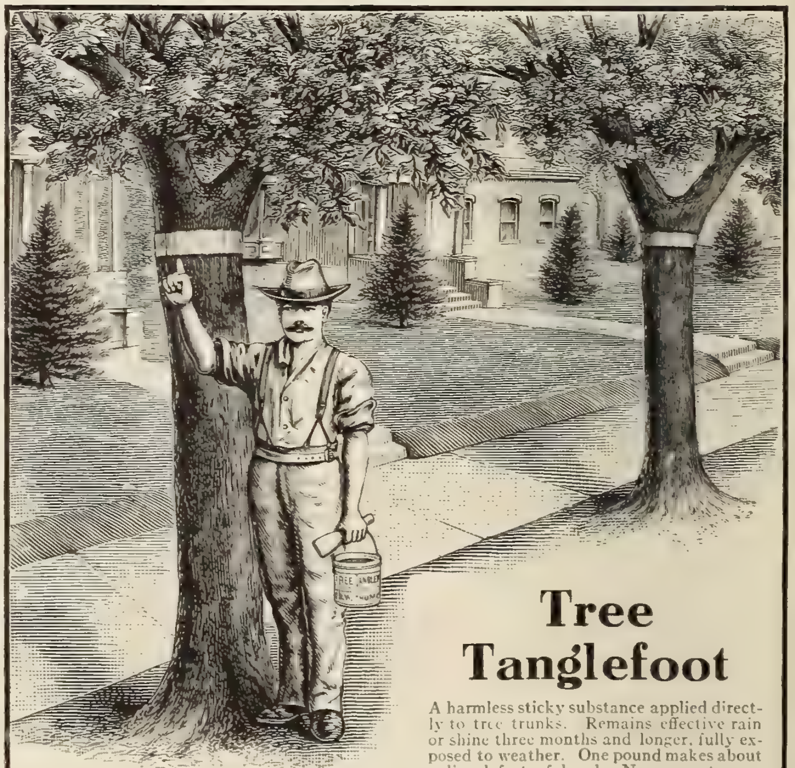

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A harmless sticky substance applied directly to tree trunks. Remains effective rain or shine three months and longer, fully exposed to weather. One pound makes about 9 lineal feet of band. No apparatus required, easily applied with wooden paddle. Especially recommended against gipsy, brown-tail and tussock moth caterpillars, bag worms, canker worms and climbing cut worms, but equally effective against any climbing pest. Tree Tanglefoot needs no mixing. It is always ready for use. Do not wait until you see the insects. Band your trees early and get best results.

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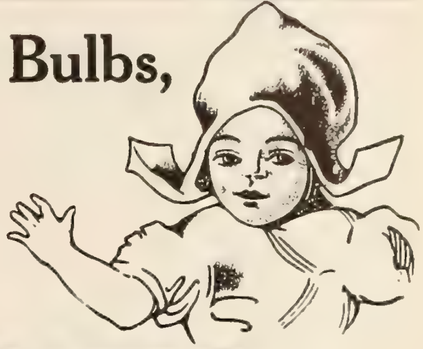

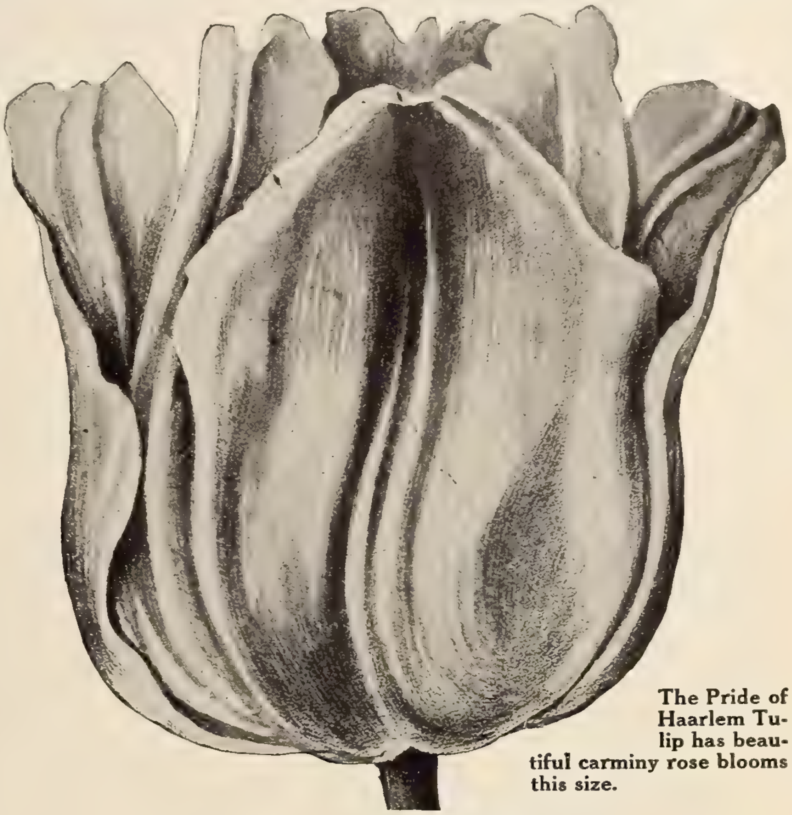

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Better bulbs at the same—or lower—prices. Solid bulbs full of vitality, instead of the large but flabby sort grown in the lower lying districts of Holland.

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Put us to the test—compare results from W. & K. bulbs with the best you can buy elsewhere at the same prices—we'll get all your orders after you see the vast difference in results.

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THE
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Co
CHICAGO

The Aermotor with the automatic regulator stops when the tank is full and starts when the water is lowered 4 inches. You oil it once a week. A gasoline engine has to be started and stopped and oiled and attended almost constantly, and you have large expense for gasoline and oil. Th wind is free.

We make gasoline engines (exceedingly good ones) but, for the average water supply for the home and 150 head of stock, an 8-foot Aermotor with a storage tank—which is a necessity with any kind of water supply—is all that is needed and is by far the more economical. The supply of wind for the Aermotor is more to be relied upon than the supply of gasoline, batteries and repairs for the gasoline engine.

The cost of gasoline, oil, batteries and repairs in pumping for 150 head of stock with a gasoline engine, will buy an 8-foot Aermotor every year, and you are still to the bad the amount of time you spend over the gasoline engine.

But the gasoline engine has its place on the farm notwithstanding the fact that 100 people are maimed or killed with gasoline where one is injured by a windmill, and that 100 farm buildings are burned with gasoline where none is injured by a windmill. For the water supply the windmill is the thing. Thousands of farmers who have done their first power pumping by a gasoline engine have become tired of it and are buying windmills. That is one reason why our windmill business increases from year to year. We can furnish you much testimony like the following:

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I am sending you a photograph of one of the oldest windmills in this country—it being the first Aermotor put up in Medina County—and is used to furnish water for hundreds of head of cattle. It was put up in the year 1889 and is owned by Mr. Murdo Monroe. The only repairs this mill has ever needed are one small gear and a rocker arm, the total cost of which was $2.50. This Aermotor is still running and doing good service, furnishing water for cattle and family.

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Find, if you can, a statement like this regarding gasoline engines.

Of course, there are places where a windmill cannot be used. There you will have to use a gasoline engine, with all of its disadvantages. We will furnish for that place a small engine which costs but $37.50 complete, so it can be set to pumping in 30 minutes. Or we will furnish you a pump jack—the best made—for $6.00, to do pumping with a larger gasoline engine.

Send for catalogue giving full information about water supply. Aermotor Co., Chicago. Branch Houses: Oakland, Cal.; Kansas City, Mo.; Minneapolis, Minn.

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Write to-day to
Gt. van Waveren & Kruijff
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50 Designs Low and Medium Priced Houses
25% Discount on all Plans in book
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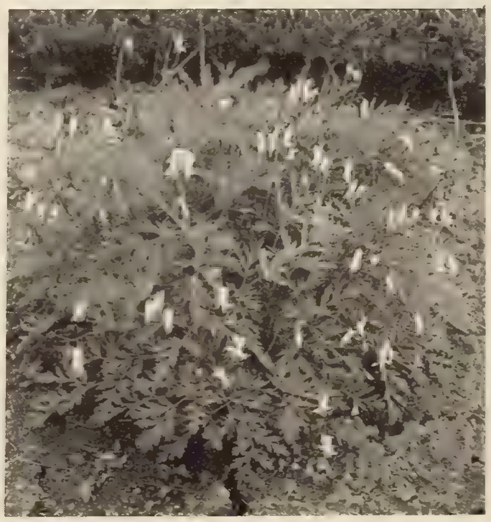
## The Little "Bleeding Heart"

LAST year I let the plumy "bleeding heart" into my hardy garden and I must say that I like it mighty well. Unlike its big relative, it does not distress me by turning yellow while the summer is still young. On the contrary its really beautiful foliage, finely cut, stays fresh until frost-time and as for blooming, you simply can't stop it; it begins in the spring and stops in the fall. The flowers are a sort of dirty pink, but the general appearance of the plant is good. Growing only a little more than a foot high, it is especially desirable for the border's edge or when allowed to run at will where a naturalistic effect is sought. It is anything but slow to run. My fifteen cents' worth of plant I divided into three plants when I set it out and the largest is now a shapely clump more than two feet across. And I have given away several pieces besides. I bought it for Dielytra (*Dicentra formosa*) but I suspect that it sometimes masquerades as *D. eximia* in the catalogues, and vice versa. I don't know that I particularly care which mine is; I like it and that is the important thing.



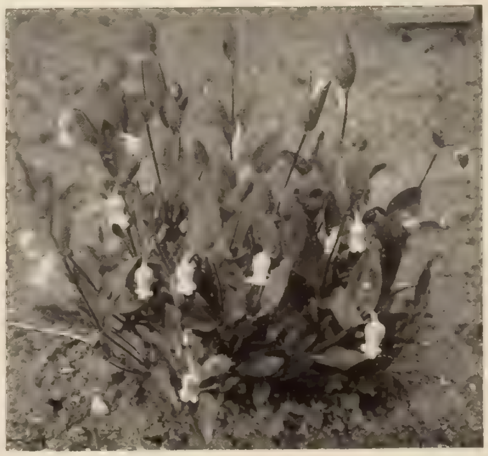
The plumy bleeding heart (*Dicentra formosa*) keeps its foliage green until frost and blooms all the season

Connecticut. J. E. S.

## A Dwarf Clematis

AN INTERESTING native plant that is only waiting to be invited to come through the garden gate is the erect mountain clematis (*C. ovata*). It is a compact little plant eighteen inches or so high that in May blossoms out with an abundance of small purplish bells. Wood gave its range in the wild as North Carolina to Florida; it is now defined as southeastern United States.

Massachusetts. M. G.



The erect mountain clematis, native, grows only eighteen inches high and blossoms in May

Bring Back the Birds

While you are working out your ideal in the garden, why not provide a home for the birds that help to make life in the country really worth while? A rustic house placed in a tree or on a pole will make an excellent home for the birds and add to the attractiveness of the surroundings. We have them in all sizes and shapes to suit any style of architecture.

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| LOG CABIN No. 1, One-Family | 10 Inches Wide<br>10 Inches High<br>10 Inches Deep | $1.50 |
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A Small Camp, on CAPE COD at Nausett Harbor, Orleans, Mass. offers attractive opportunities for an out of door life by the sea.—Bathing and Boating
Beautiful Walks, Good Library
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will give you a Summer's pleasure and satisfaction. We know it! After a trial you will know it!

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Send us 10c. (stamps or coin) and receive postpaid by return mail, catalogue and a strong field grown root of our new Dahlia, "Jack Rose"—the world's best crimson.

DOROTHY PEACOCK. Larger, clearer pink, and finer in every way than Mrs. Gladstone, a strong, vigorous grower, early, free and continuous bloomer. *The Dahlia without a fault.* Mailed postpaid 75 cents each. *Special trial offers.* To demonstrate the superiority of our Dahlias we will send the following strong field roots, each labeled absolutely true to name: 3 show, 30c; 3 decorative, 30c; 3 cactus, 40c; 3 Paeony Flowered, 50 cents; 3 New Century, 50c. The 5 sets complete postpaid for $1.75. Including Dorothy Peacock 16 in all $2.25. List of these sets on application. Write today.

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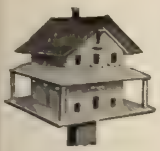

My martin houses are substantially built and perfectly ventilated, three stories and attic high & have 26 apartments designed and constructed to attract and colonize these useful little neighbors. I ship to bird lovers everywhere. Price $12. F.O.B. Chicago.

TELL every friend of birds that I have built for them the most unique and attractive hanging WREN HOUSE they ever saw. PRICE $5.00 AT CHICAGO.

ADDRESS Jos. H. Dodson, Director Illinois Audubon Society.
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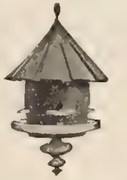
Correspondence Invited.

Do not fail to order ONE of my Hanging Wren Houses.



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## Lucky Sanford is The Place for You

Encompassed by navigable rivers and placid lakes. Hedged about by healthful pines, golden groves and scenic beauty. Hunting preserves of ample proportions. Best fishing grounds. Winter cruising on our beautiful lakes and glorious rivers. Automobiling daily during the winter and never a frozen jacket. Each day in the month can be spent outdoors, by invalid or hunter. Our invigorating sunshine is a nature tonic that will make you well. Healthful for winter homes, pleasurable enjoyment and profitable investment.

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First. Contains 1100 acres. Rich mountain soil, mainly Porters Black Loam, considered the very best for apples and peaches. There are 137 acres in apples, 6 to 11 years old, principally Albemarle Pippins and Winesaps. 13,000 peach trees, 1 to 10 years old. Orchard just beginning to bear but crop for last four years has averaged $10,671. Trees exceptionally fine and land remarkably smooth for mountain land. Power spraying outfit can be used on all of it. Most desirable property. Price $75,000 for the whole property, including personalty, or will divide to suit purchaser.

Second. Contains 288 acres, nearly 15,000 apple trees, 11 to 15 years old, and within one mile of 2 competing railroads. Elevated land, good air, drainage, within 5 miles of large city. Cheap property. A few good crops should pay for it. Can be bought for about $120,000.

Third. 324 acres in 2 tracts, 5500 Albemarle Pippins and Winesaps; 2600 from 15 to 40 years old, 2200 8 years old. Six miles from station, 12 miles from one of the largest cities of Virginia. Fine prospect for bumper crop. One of the most noted orchards in Virginia. Good buildings. Price, including cold storage plant costing $12,000 and a lot of personal property, $75,000. Terms liberal. WILL SUBDIVIDE.

Fourth. 400 acres in Augusta County, Va., 9 miles from Staunton (45 minutes in automobile), 2 miles from station; 350 acres cleared; nearly all level; 70 acres in orchard, all apples, 10 to 12 years old; 1911 crop 4,000 bbls. Old Colonial house 10 rooms, 2 tenant houses, large barn, mill, barrel shop, etc. Fine farm and undoubtedly a cheap property. Quick examination advised. Price $32,000, $5,000 cash, balance in 5 payments.

Fifth. 250 acres mountain land. Over 2,500 apple trees, one-half beginning to bear. Some of the land is rough, but the trees are well grown and very thrifty. Four and one-half miles down grade to station. Price, $10,750. THIS IS A GREAT BARGAIN.

H. W. HILLEARY & CO.,
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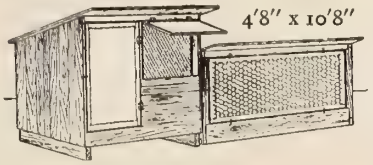
## $13.09 Builds This $25.00 House



4'8" x 10'8"

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## Let Cundall Design Your Houses

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We also sell all our houses complete, shipped knocked down, with instructions so that a novice can set them up.

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Summer offering of brood sows and young stock. Every animal registered and if not satisfactory may be returned and your money refunded.

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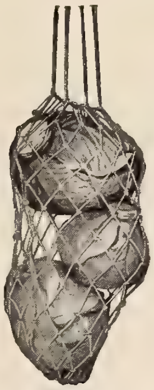

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FREEPORT MAINE
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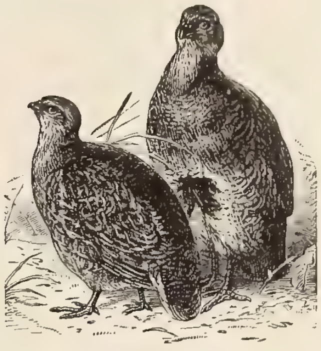

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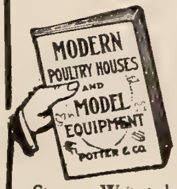

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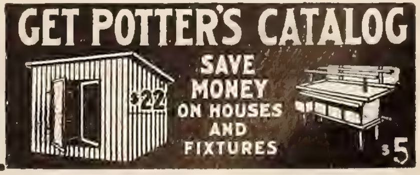

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# THE TALK OF THE OFFICE

"To business that we love we rise betime
And go to 't with delight."—*Antony and Cleopatra*

### VISITORS

This is the first spring at Garden City that we have felt at all "settled down" and we should like to have subscribers, advertisers, book-buyers and friends generally come and look us over. The gardens are all abloom, the machinery is buzzing and it is a good time to visit the Country Life Press at Garden City. Our station is just beyond the regular station at Garden City — it is called Country Life, and it takes about forty minutes from New York by train or motor car.

### A NEW WILLIAMSON BOOK

This year it is not a motor story, but a careful and accurate picture of Monte Carlo, one of the most curious and interesting places in the world with the strangest collection of people foregathered from all parts of the globe; some of them amusing, some of them tragic, but all alive and absorbing.

Mr. and Mrs. Williamson know Monte Carlo as few visitors know it. They have built a house near by on the Riviera and in "The Guests of Hercules" they have depicted the life in a story as delightful and charming as their novels always are.

### "FRECKLES" ON THE STAGE

After some months of preparation, "Freckles" has gone on the stage, and several companies are performing it; in due time it will be perfected and come to the larger cities. Meantime, the book is selling larger this year than last, although in 1911 it sold over 150,000, and as it was born in 1905 it has had a remarkable record for any book.

A first edition of 100,000 copies of a 50 cents edition of "The Girl of the Limberlost" has just come from the press; and Mrs. Porter's book published last August, "The Harvester," has been for the last three months the best selling book in America. Over 200,000 have been printed and it is still "going strong." If you have not read these books you have a pleasure before you, which any bookseller can help you to realize.

Scores of letters come to the author and publisher from readers of "The Harvester." Last month we printed one from a man of affairs. Here is an extract from a lady who by her own confession is not an experienced letter writer, but she has the poetic instinct and makes clear her ideas:

"I wish I could express in better language what I think, but I have not been educate in American School. Am Swiss by birth, only learn English from my children going to school and have pick't up some in traveling around. So you must look over bad spelling and worse language.

"I do love the woods, the hills and all the flowers that our God created, but I have never read in fiction anything that describe those things as you have done. You cannot know how much good you have done us. My husband is a Scotman and been brought up on the border of Switzerland in to Italy among the Hills of Saint Bernard and a lot of the Flowers and Herbs you mention grow where he came from. How I wish I could tell you all I have in my heart, all you have stirred up that I supposed to be sleeping. And the Harvester, He is sublime. A Man and Woman.

### TWO NEW VOLUMES OF THE NATURE LIBRARY

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### ABOUT THAT FARM

*The Garden Magazine's* big brother magazine, *The World's Work*, has been devoting time and study and energy to finding out about people who want to break loose from city life and to own a farm. It has had some remarkable experiences discovering some thousands of people who want farms and finding farms who want owners. If you are thinking on this subject, send for a sample copy of *The World's Work* (Doubleday, Page & Co., Garden City, L. I.) and read a single number in which these subjects are discussed, or better yet, send $3 for a year's subscription.

This Forward-to-the-Land Movement is the great economic and social fact of our decade — the new era in farming, the new kind of man on the soil, with new methods and new tools. Small wonder the price of farm land doubled the last ten years and keeps rising. *The World's Work's* peculiar service in the movement is this:

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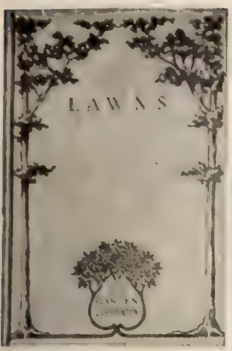
This may sound easy and commonplace; but, if you stop to think of it, you will realize that thousands of communities are seeking such men and find it a very difficult task. Perhaps this magazine can help them.



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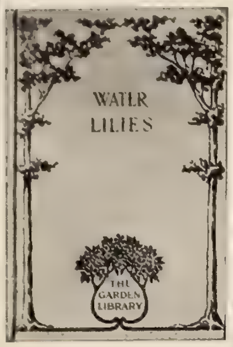

### House Plants and How to Grow Them—By P. T. BARNES

A Manual of the best foliage and flowering plants for home cultivation; their raising from seed and propagation in the window garden.

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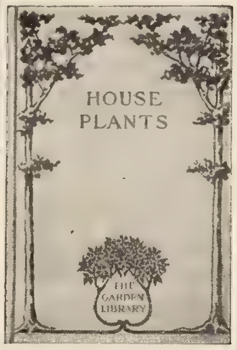

### The Vegetable Garden—By IDA D. BENNETT

This book deals fully with the various vegetables that form the staple of the small garden and contains excellent chapters on fertilizers, insecticides and garden tools, all thoroughly up to date and full of the most practical information.

### Orchard and Fruit Garden—By E. P. POWELL

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### Daffodils—Narcissus and How to Grow Them

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All that is really worth while about these most popular of spring bulbs written from the standpoint of American conditions.

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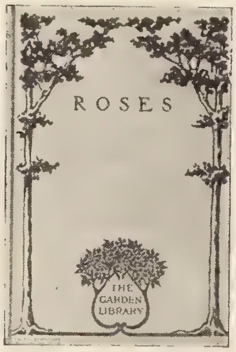

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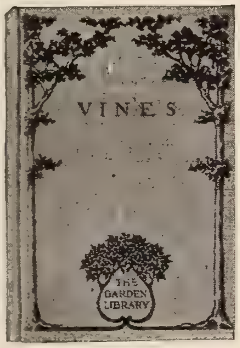

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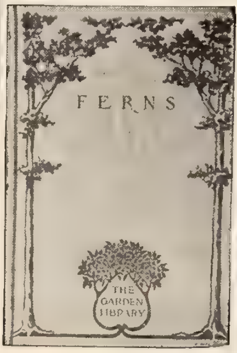

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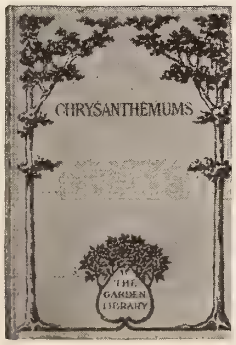
A complete manual of instruction for the growing of the Queen of Autumn in the garden border, and for specimen plants and blooms under glass, but with special regard to the opportunities of the amateur who has only an outdoor garden to deal with.



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|---|---|---|---|
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| Bicolor Victoria | " " | 2.50 | 22.00 |
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Which it only goes to show what a fool the feller is, Mawruss, because girls which they got D to F fathers, don't got to have faces.

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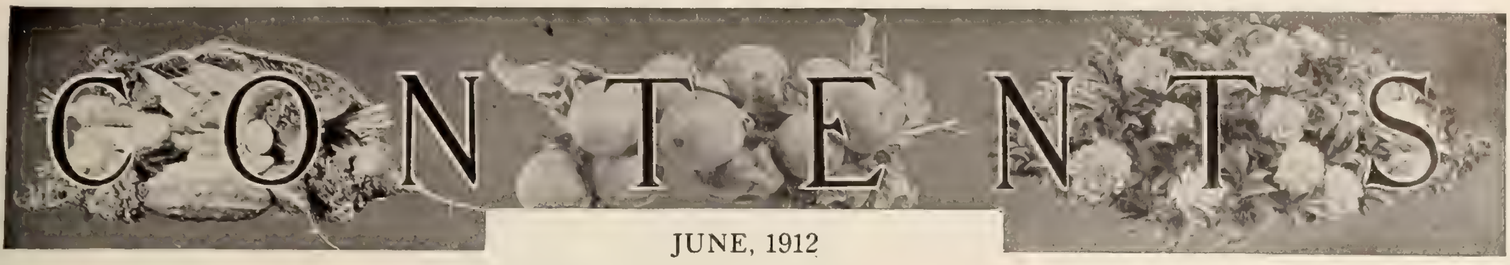

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# The Garden Magazine

Vol. XV—No. 5
Published Monthly

JUNE, 1912

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The MONTH'S
REMINDER

[For the purpose of reckoning dates, New York is generally taken as a standard. Allow six days' difference for every hundred miles of latitude.]

## Lots of Work and Some Reward

VIGILANCE and care are now the watchwords. Cultivate often for three reasons:

1. To hasten growth.
2. To conserve moisture.
3. To kill weeds.

But take warning: Don't cultivate or touch in any way beans *while there is moisture on them.* Anthracnose germs are nearly always present under moist, warm conditions, and the cultivation scatters them broadcast.

If showers are scarce water copiously now and then, not morning and evening, just enough to lay the dust.

Quality in vegetables is the result of quick, unchecked growth, and this means plenty of water at all times.

Pull radishes just as soon as they are big enough to bite. Pick peas when well filled out, but before they grow firm and begin to turn light colored. Spinach is delicious only in direct proportion to its youthfulness.

Nitrate of soda, scattered along the row dry, or dissolved in the water will work wonders. Use a teaspoonful to a watering canful at least.

Rose buds and rose bugs arrive about the same time. The latter cause trouble among the grapes, too. So far, no better treatment than pressure between the thumb and finger and immersion in kerosene has been discovered. What is your plan of action?

Flea beetles bite holes in the leaves of tomatoes, dahlias, etc., and in sufficient numbers are a real pest. But kerosene emulsion, tobacco dust, or pyrethrum effectually dispose of them.

The aphides' feeding and breeding seasons are practically all the time. If you cannot find them clustered on the tender tips of any of your vines, bushes or plants, you are indeed lucky. Use a proper spray for them.

Remember, the one year old asparagus bed is forbidden ground, no matter how attractive the stalks may look. Even a bed in full bearing should not be cut for more than six weeks. An expensive luxury? Well, yes, if you are very short of space. But you can grow onions, lettuce and radishes between the rows.

By the way, is the asparagus knife bright in readiness?

Planting must of course, go on briskly. Lettuce, corn, radishes, peas, beets, kohlrabi, all these in small quantities every two weeks. New Zealand spinach, for cutting all through the summer. All the ultra-tender melons, cucumbers, peppers, eggplants, tomatoes and okra can come out of the frames now. And late potatoes, turnips, cabbage, cauliflower, kale, etc., can now be planted.

Don't wait for the beetles to appear on the early potatoes before you spray. Cover the foliage with paris green or arsenate of lead as soon as the plants are six inches high and prepare a deadly morsel for the first comers. It will help in other ways, too, for:

Some paris green on young pertaters
Keeps bugs from eggplants and termaters.

Now is the time to decide how you are going to support the tomatoes. You can train them to single stems and keep these tied to strong stakes, one to a plant; you can make a circular fence of barrel hoops for each vine or support them on a trellis of wood or wire running the length of the row. Or, if you don't care much, you can leave them unsupported to roam over the ground. But you will not get as much fruit, nor as good nor as early from this method.

A strawberry bed that has borne for two seasons has passed its greatest usefulness, as far as high quality berries is concerned. The third year you may get a good crop but the berries will be small. So plan if you can for a rotation in which strawberries will bear for two years and then be plowed under in time for a summer crop.

Two of Loudon's rules for gardeners that are especially applicable at this season are:

"In gathering a crop take away the useless as well as the useful parts."

"Let no plant ripen seeds, unless they are wanted for some purpose, useful or ornamental, and remove all parts which are in a state of decay."

If your fruits don't set, especially plums, grapes and pears two solutions are possible: Either you have varieties that are self-sterile (cannot be pollinated by their own pollen) or there are lacking bees, breezes or other agents of fertilization. The latter trouble can be remedied by buying a colony of bees which is not only easy to take care of, but will bring you in a little cash now and then if you can bring yourself to dispose of genuine, home-made, comb honey.

Not a few persons ask us how they can store hen manure so that it will be available for the garden. One way is to sprinkle the dropping boards with dry dirt or land plaster every morning and clean them off every three or four weeks, when the manure can be harrowed in between the rows with good results. The droppings may be saved in barrels or boxes (out of reach of the weather) if an absorbent is used. When applied all lumps must be broken and the whole mass pulverized.

If you can leave the hardy bulbs where they are all summer and winter they will bloom about two weeks earlier next spring than if they are dug up and replanted.

If you must take them up, let them ripen for a fortnight or more after they have bloomed, then brush off all dirt and let them dry in a free circulation of air before storing them away in a cool, dry place.

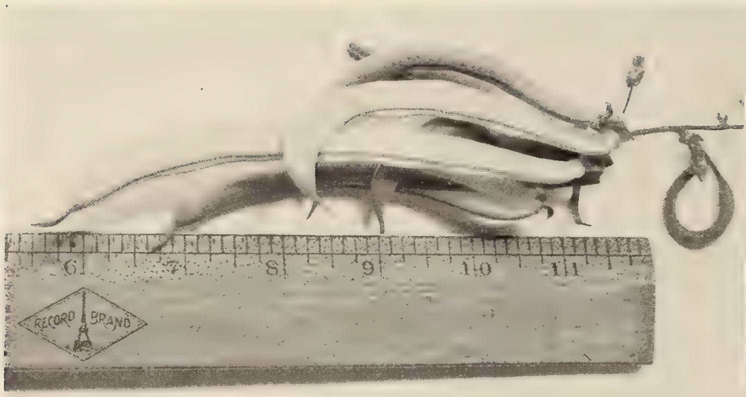
## Gardening for the Late Comer

PERHAPS you have just moved in and have almost given up the idea of a garden this year. Don't do it. You can not only start perennials for next year's effects, but also get some splendid results this season.

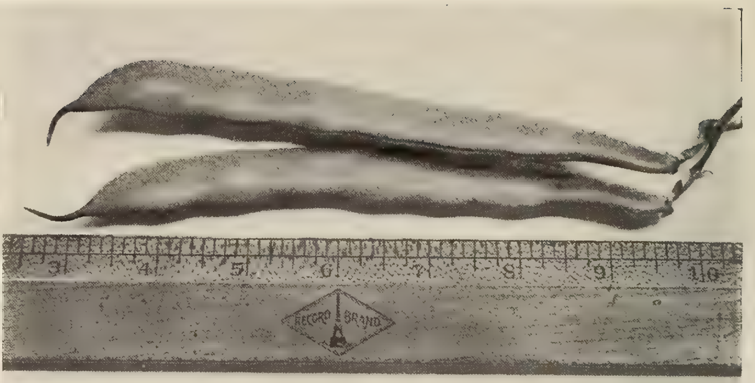
These annuals will bloom abundantly before frost: Alyssum, California poppy, caliopsis, candytuft, love-in-a-mist, mignonette, nasturtiums, phlox, portulaca, and scarlet sage. But for good results don't let the blossoms ever go to seed.

These perennials may bloom this year, and if you use pot-grown plants from the florist instead of seeds, they surely will: *Campanula carpatica*, *Centaurea montana*, delphinium, dianthus, gaillardia and *Pentstemon campanulatus*.

Buy some potted vines, too. You save all the delays and possible dangers of the germinating and early tender periods. Clematis, morning glory, hop (*Humulus lupulus*), English ivy, trumpet, canary-bird, and cup-and-saucer vines are especially quick growers if well fed and given a good support.



Hardy Wax is perhaps the best all-round wax bean. The photograph shows its prolific nature



Bountiful, a high ranking flat green pod bean. Earlier than others and very prolific

# The Best Bush Beans to Grow—By Adolph Kruhm, Ohio

[Editors' Note.— *Mr. Kruhm, is a worthy successor to the late E. D. Darlington who gave us in his time the best articles on varieties of vegetables we have ever seen. It is impossible for any amateur to give the comparative merits and limitations of varieties accurately because the facts can be learned only on large and costly trial grounds. Of course, horticulture is not an exact science; the variety that suits one place or purpose may not suit another; and opinions are judgments, not facts. Nevertheless our duty is to give our readers the best of everything. The readers of* The Garden Magazine *are able to make their own allowances.*]

THERE are four main types of bush beans: first, flat green podded; second, round green podded; third, flat wax podded; and fourth, round wax podded.

Keeney's Stringless Refugee, green pod. The largest plant of the present selection and excellent for fall use

Of recent years the demand has been strongly in favor of the round podded types. There are reasons for this. With few exceptions, the round podded sorts are free from strings, while some flat podded sorts have defied all efforts of the breeder to eliminate this unpleasant feature, and still save those characteristics which make the flat podded beans worth while. As the result, the proportion of round podded sorts to flat podded sorts in cultivation to-day is as three to two, and it is safe to predict that another decade will see still greater changes in favor of round pods.

The cardinal points in favor of the round podded sorts are their handsome appearance, great fleshiness, small seeds while in the eatable stage, and, with few exceptions, entire absence of strings.

The favorable points of the flat podded sorts are that they average longer than their round podded brethren; they are, perhaps, slightly more prolific and (as in the case of a few wax podded sorts), they hold up well on market, presenting a better appearance after hours of display, than the round podded sorts which wilt more easily. The reason for this is the larger amount of water contained in the round podded and the larger amount of fibre contained in the flat podded sorts.

The preference for either wax podded or green podded beans is altogether a matter of personal taste. While the waxy yellow beans present a more appetizing appearance when served, the green podded beans seem to have a greater number of followers who claim for them flavors not to be found among the wax-podded sorts.

My great fondness for this vegetable has led me to grow nearly all sorts fit to grow in the home garden during the past three years. I have failed to discover any vital difference in flavor among green beans and yellow beans. It's perhaps a matter of sentiment in favor of the green pods because they are the kind "grandmother used to cook." But some of those old kinds never could begin to compare with some of our up-to-date wax beans which

New Kidney Wax is better than the old-time Wardwell. Resistant to rust and has a long season have every quality that could be desired in a bean, plus appearance when served. But that again may be only a matter of personal appreciation, or prejudice.

After carefully testing nearly a score of the best new and old varieties of green and wax podded beans of both types, I have selected the following:

FIVE BEST GREEN PODDED BUSH BEANS

1. *Burpee's Stringless Green Pod.* For more than twenty years this has been the favorite in American gardens. It is early and bears freely, is stringless, round, about ½ inch in diameter, averages 4½ to 5 inches long and is slightly curved. A handsome sort, borne on a healthy plant which stands dry weather well and rarely ever disappoints.

2. *Bountiful.* The only flat podded green sort I have retained in the assortment I grow every season. For the second time in two consecutive years, Bountiful proved the earliest of all bush beans, producing pods 5 days sooner than Stringless. The second picking of 15 foot rows gave me two quarts of Bountiful pods against one of Stringless. Bountiful is as nearly stringless as the breeder has been able to make a flat green podded bean. Its pods contain a little more fibre than a Stringless of like age; but they average larger and are entirely stringless until they become longer than 5 inches.

3. *Giant Stringless Green Pod.* Pods closely resemble those of Burpee's Stringless. While they average nearly an inch longer they are produced about four days to a week later. A good, perfectly stringless, round podded sort with many dependable qualities.

4. *Fordhook Favorite.* The latest addition to the round green podded sorts and one that is bound to make many friends. In general appearance it resembles stringless green podded, one of its parents, but the dry beans are pure white — hence elegant as a shell bean for winter use. Fordhook Favorite is a few days later than Burpee's Stringless, has slightly curved pods, averaging 5 inches long. A prolific bearer, with a long season. It is stringless until too old to snap, free from fibre and of delicious quality.

5. *Keeney's Stringless Refugee Green Pod.* The latest variety as to season in the assortment and quite distinct in many ways. Plants grow to much larger size than those of above four sorts, are of spreading growth and have a smaller foliage. One of the best sorts for fall use if planted July 1st. Pods average 4½ to 5 inches long, are semi-round, stringless, and of a distinct light green color — showing the true Refugee blood. Of excellent quality, brittle and tender. One of the most prolific sorts ever produced.

FIVE BEST WAX PODDED BUSH BEANS

1. *Hardy Wax,* is in my estimation, the best all round wax podded bush bean yet evolved. Four to five inches in average length, always stringless and tender, round as a pencil, slightly curved pods of beautiful lemon-yellow color. It's a pleasure to prepare Hardy Wax for the table — such smooth, uniform, brittle pods. Good early or late in the season. It's the earliest sort I know, but does equally well planted in summer for fall use. Plants are thrifty, healthy, everbearing and hold their heavy loads of pods well above the ground. "Why can't we buy beans like these on market," is invariably the question with which friends confront us after tasting them. Best solution — grow them yourself!

2. *Pencil Pod Black Wax* is the best type of Black Wax Bean ever developed. Pods grow to be 5 to 7 inches long, are round, perfectly stringless, meaty, tender, brittle; all good qualities desired in a bush bean are found in this sort. About a week later than Hardy Wax and perhaps not as free a bearer. Requires better soil than Hardy Wax to do its best.

3. *Stringless Refugee Wax* is the wax-podded brother to No. 5 among the green pods. The characteristic growth of the plant and its purple blossoms proclaim it a true strain of Refugee. Pods do not exceed 4½ inches in length but are produced by the handful. You are never done picking this sort. A fifteen foot row will yield a quart every other day for weeks at a stretch. Beans are semi-round, stringless, meaty, free from fibre, and of top-notch quality. "Klein aber fein" (small but fine) is what the Germans would say about it.

Wardwell's Old Kidney Wax, now surpassed by an improved form

Stringless Refugee Wax, a worthy brother to Refugee Green Pod

4. *Sure Crop Stringless Wax* is one of the latest pets of this country's foremost bean breeder — Mr. C. N. Keeney of New York State. It well deserves its place among the "five best," although there is still room for improvement. Plants are exceptionally hardy (sure crop in cold weather), have thick leathery leaves (sure crop against blight) and require less moisture to do well than any other sort I tried

Two newer beans worth notice. Fordhook Favorite on the left, a new green pod bean with solid meat and small grains. On the right, Sure Crop Stringless Wax, a very hardy kind

The author's bean trial ground where the best of good cultivation is given

this season (sure crop during drouth). Pods average 6 inches long, are flat but fleshy and of excellent quality while young. If allowed to get too old, they will show a slight string and some fibre when being prepared for the table. Remedy against this: Pick them regularly and clean the bushes of everything that's ready. Sure Crop Stringless Wax will find its place.

5. *Burpee's New Kidney Wax* is a flat sort of many sterling characteristics. Those who have stuck to old Wardwell's for decades, should try a row of this bean alongside. Thrifty, healthy plants, with clusters of handsome pods, averageing 6½ to 7 inches in length. Flat but thick through, tender and brittle at all stages of development. Of best cooking quality and one of the finest for making bean salad on account of its great tenderness and superb flavor. Bears freely and during a long season, is remarkably free from blight and rust. A trade winner on market and a praise winner at the table.

### AS TO GROWING BEANS

Here are the essential points in bean culture; they are few and so easily grown that there is no excuse for a failure:

Always plant beans in rows, dropping the seed about 5 inches apart in drills 3 inches deep. Place rows 2½ to 3 feet apart and hill slightly. This will insure proper drainage and keep the beans off the ground. Pick as soon as enough pods are 4 inches long to make a meal. Continuous picking insures prolonged bearing. Pick carefully so as not to disturb young forming pods and blossoms. Cut the stems of beans with your finger nails, as jerking the plant is apt to disturb important feeding roots. Never pick when bushes are wet, as this will cause blight and rust. For a succession of crops, for a family of 5, plant 30 feet of row every two weeks up to August 1st.

Stringless Green Pod has been a reliable bean for more than twenty years

# A Transplanted Summer Garden—By Alice Slosson, New York

### THE PRACTICAL WAY OF COVERING UP BARE SPOTS IN THE FLOWER BORDER—THE SUCCESSFUL MOVING OF PLANTS IN FULL FLOWER DURING THE SUMMER

THE time was June 20th. The place was Northern Vermont, and the dramatis personæ myself and the "hired man" (see New England vernacular), whose chief recommendation was a readiness to do at once whatever he was told to do, and this without any counter-suggestions of his own. I mention this last for the appreciation of those, like myself, who have striven with another kind of gardening assistant. They will know the real importance of this seemingly insignificant fact, without which the transplanted garden would never have been.

An eight weeks' illness had kept me three hundred miles from my garden so carefully planned the season before, and this at the time most crucial in perennial borders, namely, mid-April to mid-June. A year previous in June, after prolonged and feverish selection from many catalogues and authorities, no two of which held the same opinion in the matter, the seeds were sown of such old-fashioned perennial flowers as seemed best suited to constitute a strictly up-to-date garden. There were in all twenty-three varieties.

All but three kinds came up freely, and in early August were transplanted to coldframes where they could be properly protected until spring and a final transplanting to the open borders. The severity of the Vermont climate makes such protection of seedling plants absolutely necessary during their first winter. Afterward they seldom winter-kill. This acclimatization may be effected also by sowing the seed in November and allowing it to lie in a covered coldframe all winter. If it does not rot before spring, the resulting plants will be as hardy as those which have come through a winter in plant form. This is worth noting and profiting by, unless the seed is too choice to chance losing. My coldframes are covered with old floor matting, or else with building paper.

The final resting place for those twenty-three varieties was prepared late that fall, as nearly in accordance with the rules of the game as the weather and my purse would permit. (The ground froze unseasonably early; I omit purse particulars.) The result was a border bed about 70 feet long and bayed in curves, giving a width of from four to ten feet.

As I came up the driveway in the late afternoon of that 20th day of June, a year later, the first thing to be seen was that bed, enclosing the west side of my garden in all its pristine nakedness of bare soil and muddy contour. Then, back of the house, I came on my nursery beds beyond the orchard. The coverings had been taken off the frames in April, but no attention had been given to the poor things inside, and the unpremeditated result was gorgeous. I think everything had lived. A dense wilderness of buds and blossoms rose out of the knee-deep grass surrounding it on all sides. Hollyhock spires already showing color made the background for an army of foxgloves, some of whose lower bells were almost out. The Oriental poppies were past, but a few lingering blossoms glowed beyond the long-spurred columbines. Packed like sardines in their section of frame, the countless blossoms of these last hovered like a swarm of many-hued butterflies above the leaves. Many of the sweet Williams were in bloom; more still green in bud. The same with the larkspurs. Stokesia, Michaelmas daisies, of course; gaillardias and later sorts were not so far advanced, but the clove pinks were at their best, and the ever-blooming carnation top-heavy with fat buds. It seemed hopeless.

Everyone assured me that nothing could be done "because even if the plants lived through a transplanting now, all the buds would blight." But with that awful empty bed spurring me on, I transplanted everything, except the columbines. They were too wonderful to touch. And nothing blighted.

Someone has said that "Most of sterling worth is what one's own experience preaches." Nothing in gardening is more true, and the preaching of my own successful experiment is that you may transplant what you will and when you will, provided only that you do it in this way, and not when the wind is blowing.

Having first removed the nozzle, I attached the hose to the garden standpipe, turned the water on full, and let it run for nearly twenty-four hours through the whole section of plants to be transplanted, moving the open end now and then so as to flood the entire place as evenly as possible. At the end of that time, I had a fairly good swamp with a brook running through it.

Now it is a fact that all florists stand marketable flowers to their necks in water for twenty-four hours before shipping. They will absorb enough water in this way to keep them for a long time. These plants of mine proved to have absorbed more than they could "sober up" under in a week. By means of plank path-ways, we tied up each plant with lengths of raffia, just above the crown, and again near the top, being very careful to keep every part straight. The tyings were not taken off until a week later, that the plants need expend no energy in holding themselves up. We moved them all, a wheelbarrow load at a time, in two days, turning the water on again during the intervening night. They came out of the ground, even the biggest, as easily and slimily as can be imagined, every bit of earth clinging to the roots as only mud can cling.

About four days after setting out, I gave them a strong nerve stimulant in the form of a half-inch of wood ashes spread over the entire surface of the bed, well-raked and well-watered in. There is nothing better for fainting fits in the vegetable world!

And now, knowing what can be done, my garden no longer has those unsightly gaps in the perennial borders, against which one has had to resort to successions that seldom succeeded at the required times. In my nursery garden, the "left-overs" are used for this very purpose and served up accordingly as "entrees." When larkspurs are cut back, I set the intervening spaces with the tall variety of white snapdragon in bud and even in blossom. The more slender second bloom of the larkspurs will allow this without over-crowding, and later on, when they catch up, the two will go on blooming together. Or, when the carnations are past, set out among them the single petunia Rosy Morn, and keep that part of your garden, otherwise without a flower, a thing of beauty for the rest of the season; with the French pink of that petunia's blossoms against the green-blue of the carnation foliage. Even the Shirley poppy, most fragile of growing things, may be handled with impunity and entire success in this way.

Many advisers say, "fill in all bare spaces with poppy seed, sown broadcast." This makes pleasant reading. It calls up a mental picture of a garden so filled in that would be gratifying if realized. But no one begins with bare spaces. They occur. And there is a horrid interval of earth and tiny plants which are always too thick here and too thin there, and whose reluctant bloom comes so long after as to find itself in turn surrounded by the empty places of a past generation. No, an immediate need of this sort cannot be met with a packet of seed and future conditional flowers.

Last July I set out Shirley poppies by the hundred, just as the first flower bud was pushing up from the centre. It was a case of wanting what I wanted both when and where I wanted it, and having it too! To begin with, the poppy seeds had been mixed before sowing with a cupful of dry sand, and the seedlings thinned unsparingly until the plants stood at least four inches apart. Equipped with a thin-bladed trowel, a large tin tray and a package of tissue paper, I wrapped each plant as lifted from the mud in a single sheet of the paper, which formed a surprisingly tough little paper-case, and for all purposes of transplanting, turned the seedlings into "pot-grown" plants, with the difference that these are set out just so, without removing the paper cases. They adhere most tenaciously, and there is no falling away or loosening of the earth from the roots to shock the over-delicate fibres.

Once in the ground, a few days will rot the tissue case completely out of existence. The tin tray is used for moving them. As each plant is taken up, it is stood against the rim of the tray, until enough have been taken up to reach all the way around the edge, never letting any two touch each other.

All small annuals may be transplanted in this way to advantage, and will repay the extra trouble, especially stocks and asters, the quality of whose bloom depends greatly on an unchecked growth from seed to flower. And yet they require transplanting to give vigor!

One last warning: Do not try to move anything when the wind is blowing. Fly kites, or sail boats, or employ yourself in any of the other ways that nature provides for such times; but don't transplant!

All the flowers shown in this picture were transplanted successfully in full summer by being careful to thoroughly soak them with water before their removal and tending till established

# The Home Strawberry Bed — By W. H. Jenkins, New York

NOW IS THE CRITICAL TIME FOR THE NEWLY SET BED — WHAT YOU MUST DO THIS YEAR IF YOU WANT BERRIES AS GOOD AS CAN BE GROWN NEXT YEAR — ROUTINE WORK ON THE OLD BED

IT IS of the greatest importance that the new strawberry bed for fruiting next year (and which was set this spring), be kept free from weeds. Begin cultivation before the weeds appear. Do not wait for the ground to bake hard, but start the cultivator while the soil is mellow. A garden wheel hoe, with large wheels, having such attachments as plows, rakes, cultivators, teeth, etc., is the best tool to use. For the first cultivation put on the plows and run the wheel hoe both ways between the rows of plants, which should be at least two feet apart each way and in check rows. Cut the soil quite deeply between the rows each way to aerate and mix the fertilizer with it. Next put the rakes on the wheel hoe and pulverize and level the little furrows left by the plow.

If you lack space for garden vegetables and wish to do some intensive gardening, sow a row of vegetables, such as early lettuce, radishes, spinach, or some quick-maturing crop, half way between the rows of strawberries. Put the rows of strawberry plants and the vegetables at least one foot apart. A very good way is to mix lettuce and radish seed and sow them. The radish will germinate in about a week; then one can continue cultivation with wheel hoe. Put on two cultivator teeth on each side of the hoe and run them on either side of the row of vegetables, i. e.,, straddle it. Clean out all these early vegetables in June, so as not to obstruct the cultivation of the strawberries. If one has elsewhere in the garden plenty of rich soil prepared for vegetables, do not plant any crop in the strawberry rows.

During midsummer cultivate so that there will be a dust mulch — a fine layer of soil on the surface — that will cause the moisture to rise by capillary attraction. The best way to do this with the wheel hoe is to use the cultivator teeth as soon as the soil dries out after a rain, then finish with rakes, using the hoe to cut off all weeds as soon as they appear. Only a little hand hoeing will be needed close around the plant. If you keep a horse or can get one easily, horse cultivation with a cultivator having several small teeth is best and easiest, but this should have been planned for when setting the plants by making long rows two and a half feet or more apart. I have sometimes cultivated the long way of the bed with the horse and the short way with a wheel hoe. This makes the soil so mellow that the wheel hoe runs very easily.

The method of clipping and transplanting runners, if any are left to grow, will depend on the plan of culture you have decided upon. For best results in hill culture, put the plants in check rows not over two feet apart each way; eighteen inches is better for light soils, and for the non-stooling varieties. Hill culture is the highest culture and the plants require more attention. The runners must be clipped every two or three days all summer, the plants watched closely for white grubs which eat off the roots of the plants; then the bed requires good mulching in the fall to keep the plants alive all winter.

If the white grub appears try the carbon bisulphide remedy. Just pour a tablespoonful of the liquid on the crown of the plant, letting it soak into the soil.

Probably your best plan will be to practice a hedge row system, which is to cut all the runners until about July 1st, when bed one or two of the strongest runners on each plant in the rows so as not to interfere with running the cultivator one way. After this try to keep all runners cut, and a dust mulch around the plants and the weeds destroyed when they first germinate.

It is very bad practice to dig plants from the fruiting bed to make a new bed in the spring. It is, however, a good thing to make a little propagating bed quite late in the spring, when the leaves are so large that you can distinguish the different varieties, using those which have proved most desirable. One can bed all the strong, early runners at one end of a row, placing them around the mother plant like the spokes in a wheel and holding them down by little stones or soil. Keep the bed clean and late in the summer thin out the plants so that they stand two or three inches apart. I prefer to make the propagating bed apart from the fruiting bed, so that I can practice horse cultivation and can cultivate the whole length of the row.

Probably the strawberry bed that is fruiting this year is weedy and must be cleaned out to mature a good crop and to save the bed for another year. If it was kept well weeded last year and well mulched the work of weeding is easy. If there are too many weeds remove the mulch, cultivate well between the rows of plants hoe out the weeds left and then replace the mulch between the rows.

In order to keep the berries from getting very sandy, place a layer of green grass between the rows after the weeding is done. It is a mistake to think, as many do, that weeding the fruiting bed of strawberries will injure the plants. Shallow cultivation is good for the plants all summer, and even up to picking time. With a heavy mulch there will be fewer weeds and less evaporation of moisture. When the berries are picked, mow the plants close to the ground and cultivate between the rows to start a new root growth and a new growth of foliage so as to have new plants instead of old ones for fruiting next year.

Success with strawberries lies in keeping the bed in perfect condition. Cultivate often and keep down all weeds

Almost a quarter of a century in one place! The Madonna lily is best planted in August and will increase without further trouble

# Tall Perennials for Special Purposes — By Gladys Hyatt Sinclair Michigan

A FEW EASILY GROWN COMMON FAVORITES THAT MAY BE USED FOR SCREENS AND BOLD EFFECTS IN BORDERS — SOME SUGGESTIONS THAT WILL HELP OUT COLOR SCHEMES, AND WHAT TO AVOID

THE places for tall perennials are many and tall perennials are many; yet tall perennials that just fit their places are all too seldom seen. Haven't people even a speaking acquaintance with the numerous tribe of hardy graceful things with long backs and lovely faces, that shrubs must usurp the perennials' places and annual sunflowers stare impudently from hardy borders? Truly it would seem so.

Perhaps the formal borders and isolated plantings cry for suitable tall perennials as loudly as any place. For these, that must be in best bib and tucker every day, hardy reeds are excellent decorators. The great reed, *Arundo Donax*, is the giant of the family; with all it wants to eat and drink it will grow twenty feet high. Its slim straight stalks and slim long leaves with its great height make it an ideal dweller in the centre of formal round beds, at the back of formal borders, in specimen groups on a lawn, at the end of a walk or the corner of a building. If you live where winter is severe be cautious about planting the newer variegated form of Arundo. It is beautiful though, growing only about ten feet high at its best, but it is far from hardy.

Of the same class of hardy grasses is the hardy pampas grass (*Erianthus Ravennæ*). The true pampas grass we of the colder north cannot have, but this cousin leaves little room for regret. It grows higher than the true pampas (about twelve feet); its plumes sway just as lazily, it often has thirty to the plant and is very resistant to cold. What more could we ask? Another fine thing about hardy pampas is its decorative value in winter. I recently saw a clump of it planted to soften the angle of an arbor. It had been left standing at the fall clean-up and every graceful drooping leaf and every wonderful plume was white and glittering with hoar frost; that group of grasses was a thing to remember.

The plume poppy (*Bocconia cordata*) is a tall perennial especially suited to single clumps. Its large, poppy-like grayish leaves, its well clothed, seven-foot stems crowned with great creamy pyramids of tiny flowers; its graceful growth and eagerness to do its best make Bocconia a treasure. It needs nothing especial except plenty and plenty to eat. To be sure, Bocconia increases by suckers — "spreads under ground" — but not so rapidly as to be weedy; and your friends will be only too glad to take your surplus roots after seeing your plants in July and August.

Where blue can go with white in the formal bed or border set delphiniums with the plume poppy. King of Delphiniums, Mme. Violet Geslin, and Rembrandt are highly valued hybrids, all tall and with long spikes of beautiful flowers. But unless well stocked, the wisest investment is a reliable mixture of plants at a dollar and fifty cents a dozen, rather than a third as many named plants at the same price. A delightful thing about delphiniums is their ready fashion of growing from seed. The care that will grow pinks will grow delphiniums.

In the formal spot that you wish to be most ravishing, plant Madonna lilies in front of delphiniums. The two will be indivorcibly wedded in your thoughts ever after and their daughter you will name Delight. Nowhere else, except possibly in front of clipped evergreens, do these lovely white lilies so show their loveliness. Good bulbs of the Madonna (*Lilium candidum*) cost but a dollar and fifty cents a dozen and they increase from year to year. They require only rich light soil and good drainage, though they and their

*Boltonia asteroides*. A single plant will give a shower of bloom in September and October. Valuable in connection with shrubbery

blue consorts will thank you for water in plenty at blooming time. Take the precaution to shake candidum bulbs in powdered sulphur before planting in August, and remember that this lily defies all lily traditions by taking shallow planting; three or four inches is enough. Once planted, they are beauty for generations.

The new hardy sunflowers resemble dahlias, single and quilled, more than the tin pan affair of old times. These modern ones add a stately note much desired in formal borders. Daniel Dewar is about the first of the season. It has single yellow flowers in July. Plant the double orange-yellow Meteor for August, Miss Mellish with her single, curly-petalled blossom for September and the cluster blooming Maximilian for cutting in October. All these grow five to six feet high, are easily raised from seed, and require only abundance of food.

The question of backgrounds is a puzzling one in small or new gardens and the wise gardener will plant tall perennials to shut out and shut in, to display lower growers and to help make pictures while shrubs and trees are growing. Golden glow is a firm friend to the background painter. Common, yes; but thrifty and willing, handsome and clean. Set it in great ranks, pile on the fertilizer spring and fall, and that background is assured.

Delphiniums grow bushy and their handsome foliage displays shorter plants well. Being blue, they can grow harmoniously with golden glow. Hibiscus or hardy mallow is invaluable for backgrounds. The variety militaris or "halbert-leaved" I have seen as a veritable shrub holding its wonderful pink chalices far above my head. The photograph shows swamp rose mallow and a hybrid, Crimson Eye. I could not reach around the lovely pink and pure white blossoms with both hands. Hibiscus needs heavy soil and plenty of water; not necessarily a low place, though a swamp dweller by nature.

Boltonia is a plant oddly unappreciated. When I saw the one in the illustration blooming away in gravelly sand last September I thought of the Irishman who laid one feather between his head and a stone and said, "Begorra, if one feather lays as hard as that what would a thousand do?" If one untended boltonia plant looks like that, a thousand — even a hundred — would be a floral snowdrift. There are two species of boltonia. Be sure to get the white one, *B. asteroides*. The more you have of the hateful magenta, *B. latisquama*, the worse off you will be.

Most of the hardy asters, valuable as they are, grow too low for real backgrounds but there is one, Tataricus, that stands between five and six feet with fine large bluish violet blossoms. It blooms in late September and October and is a treasure among tall perennials.

*Chrysanthemum*, or *Pyrethrum uliginosum*, is splendid anywhere and especially in the background. In poor soil it grows three and a half feet; in rich soil nearly five. Daisy shaped blossoms are universal favorites and these plants are a riot of daisies, their clusters of three to seven often covering the plants. All pyrethrums are great eaters.

Pond banks, the edges of pools, bridge approaches and brook sides need tall perennials of a different class. Cat tails are most appropriate and handsome; so are the reeds. Eulalias, cousins to the old time ribbon grass, only from four to six feet high, are indispensable here. The variegated form (*Miscanthus Sinensis*, var. *variegatus*, called in catalogues *Eulalia Japonica*) has its white or yellow stripes running lengthwise and the showy variety, zebrinus, has broad bars across its leaves. Plant with these *M. saccharifer* for its shining green growth and graceful frosty looking plumes in summer.

Wild parsley with its beautiful leaves and great white corymbs belongs near the wet places too; so does the tall native *Helenium autumnale*, var. *superbum* with its cushiony yellow daisies in the fall. Two of our goldenrods add brilliance here in late summer; *Solidago Canadensis*, five feet high in August and the giant *S. altissima*, ten feet, in late October.

For thick screens to shut out the hideous and shut in the happy, plant golden glow, hardy asters, bocconia, hibiscus, hardy sunflowers and hardy pampas grass, either as separate lines or in a mixed hedge. A mixed perennial hedge has unfailing charm. With these can be used polygonum — giant knot-weed — but be careful. It is like the camel in the Arab's tent, fain to take full possession — a most serious drawback to its undeniable white beauty.

Tall perennials make excellent accents in the hardy border; to emphasize a curve, to draw attention to some especial grouping or to break the monotony of lower growers. Set reeds against the big rock just where the path bends sharply. Common hollyhocks at regular intervals will accent your straight bit of trim border as nothing else can. Only delphiniums can "put over" the whole beauty of that yellow corner. A group of eulalias will separate roses from lilies that must inhabit the same plot, while boltonia, standing at the end of a bed of pale asters, looks like a lovely girl in a white gown watching over a flock of little sisters.

Borders of blossoming shrubbery should be oftener lightened and brightened by tall perennials planted among them. With spring blooming shrubs they are especially good, keeping the line bright all the season. Bocconia can hold its own here and is a distinct addition. So is Arundo, polygonum, boltonia and the tall golden rod.

The hardy hibiscus, in June, gives large, saucer-like flowers and thrives on dry as well as on wet soils

# Herbaceous Perennials that Are Positively Hardy — By C. L. Meller, North Dakota

## POPULAR GARDEN FAVORITES THAT EVERY ONE MAY HAVE — SOME ACTUAL EXPERIENCES IN THE TRYING NORTHWEST IN FINDING EFFECTIVE IRONCLAD PERENNIAL PLANTS THAT SURVIVE MOST TRYING FROSTS

[Editors' Note. — *The past winter proved a very trying one, and shook confidence in many "really hardy" plants. Strange vagaries occurred, and we shall be glad if our readers will favor us with any actual observations that seem to run counter to normal experiences. The exact conditions should be noted as to soil, moisture, etc., in sending in any records.*]

THE word "hardy" as applied to perennials is relative; that which the gardener in Virginia finds hardy, the man in the Northwest will find just the opposite. We feel that up here in North Dakota we have found a more restricted application of the word "hardy" — have brought it, as it were more nearly to its precise definition — and designate the following perennials as hardy because they have passed unprotected through winters in which zero weather continued for weeks at a time and then through summers when rain was almost unknown. A plant that lives through these conditions may well lay claim to being "hardy."

For the extreme difficulty with which roses can be grown in the Northwest, we are compensated in a measure by the ease with which the peony will flourish. It seems to be alike indifferent to cold and heat, shade and sunshine. No plant responds more readily to culture and manure; the man who desires immediate results for his efforts should plant peonies. As far as the Northwest is concerned, a fortune awaits him who can bring forth varieties of this perennial so as to extend the bloom, for, let us say, another month. The market awaits such and a grower can sell them at his own price. According to my note book, peonies start into bloom out here in the Northwest about June 4th and on June 25th are very near their last blossom.

Equally as hardy and equally as prolific in its bloom is the German iris. There is scarcely a location where one cannot grow this plant. Its only drawback is its somewhat restricted period of bloom, especially since the Japanese iris is an altogether unreliable bloomer in the Northwest. The iris even more than the peonies tend to crowd themselves out, and will need to be lifted and thinned out every fourth or fifth year for best results.

A peony the fourth summer from planting a two-eyed root. It had practically no after care

Larkspur flourishes and its blue color is a welcome note in June

The iris and peony may be used together provided there are other factors in the composition. The peony will then carry the floral display two to three weeks farther into the season. The iris can be counted on for but very little after the first week in June — June 12th I find as a definite date in my note book.

The tiger lily, being a native, is consequently hardy. It is a plant that you may abuse as you will, stick it in clay or sand, in sunshine or shade. It looks equally pretty when peering out among the foliage of the shrubbery group or when massed together against the green background of shrubs and trees. It is a summer bloomer; the hotter the sun, the more joyous seems its color. The bloom is at its best when the early phlox makes its first appearance. When the last forlorn iris drops from its stem, the yellow lilies begin to unfold their petals. They are earlier than the tiger lilies. Holding their flowers well above the foliage, the effect they produce is distinct from that of the tiger lilies whose equal, however, they are in rugged vigor. It is surprising in what tough soil both these lilies will thrive. A weed could scarcely show a more rugged constitution.

Dianthus furnishes two species that laugh to scorn the winters of the Northwest. These are sweet William and garden or grass pinks. Both are in their full floral array around the middle of June. Where the average plant will grow, these will grow, in clay or sandy soil, and be little the worse for an extended period of drought.

The oriental poppy nears the end of its bloom just when the garden pinks, the sweet Williams and the yellow lilies are in their prime. It strikes one as somewhat odd that this plant, with its tender looking foliage and its tropical intensity of color, should be hardy in a climate as rigorous as that of the Northwest. At times a trifle hard to start, if once established it is in the garden to stay. When the oriental poppies drop their large red petals, they are followed by the larkspur. They are some of the tallest perennials of which the Northwest can boast and afford a welcome addition to the somewhat rare blue tints of summer. Larkspurs start into bloom around the 18th of June when the columbines are about at an end with their blossoms. These latter are native, flourishing alike in partial shade and full sunlight. They work in well with ferns to the north of a house where the morning and evening sun reaches them. The untidy appearance of the herbage after the plant is out of bloom should be hidden by more enduring foliage of other plants.

Phlox, North America's very own flower, seems to be especially at home in the Northwest. Flame is the Greek meaning of the word phlox and taking the family as a whole, annuals and perennials, this name is suggestive; the floral flames of the South moderated to the North, as it were. When the tiger lilies are at their best, the earlier phloxes begin their bloom which lasts until Jack Frost arrives. They are in flower when the woodbine is in fruit and some are still in bloom when the foliage of the vine is turning crimson. Much the same note that the peony brings into early summer, the phlox brings into fall. Any garden soil and almost any situation

Garden pinks are among the most reliable low growers, doing equally well in all kinds of soils

suits them, provided they have sunlight for a part of the day. The dwarf phlox, moss or ground pink, will often live over the winter but cannot be regarded as positively hardy.

Golden glow comes as near to being a weed as a respectable plant dares without losing its character. If there is anything, short of actually digging it up, that will stop this plant from growing and flowering, that something is certainly not poor soil, summer's drought nor winter's cold. Set out a small clump, and in a few years it will cover an area three feet in diameter. The native wild sunflower produces much the same effect but with a suggestion of refinement that the golden glow lacks.

In spite of its tender appearance, the bleeding heart, once established is perfectly hardy and while a bit more susceptible to adverse soil conditions, is in other respects as rugged as any perennial thus far mentioned.

The plantain lily or funkia has a faculty of taking care of itself that recommends it to the gardener with little time for gardening. Its bloom is not particularly conspicuous but its foliage is ornamental throughout the season which makes the plant excellent material wherewith to edge the perennial border. Yucca is hardy but it seems to be deprived of its faculty of bloom by being buried under snow for any length of time.

For almost a month in early fall the Boltonia gives its bloom. It increases without any care and grows in most soils

When the vines hang bare and trees stand naked, we still have blossoms to cheer our Indian summer — that vague but most delightful period of all the year. *Aster ericoides* will brighten the barest hillside in fall with the airy bloom of its tall wand-like flowers. On an exposed slope where the water flows off almost before it reaches the plant's roots and where the frost penetrates deeply, this aster will flourish. A bit more particular as to soil but in other respects equally as hardy, is the New England aster, another plant that should find a place in every garden. It must be a frost, a very strong frost, that can blacken the bloom of these asters.

There is a rugged plant, the boltonia, almost weedy in appearance, that deserves to be known and grown much more than it is. The daisy-like flowers are held fully four feet above the ground and for nearly a month they gladden the autumn landscape with rugged cheer. The plant will grow as readily as a dandelion and is not a bit more particular as to soil or location. Set out in spring, it blooms the following fall but does not attain its full height until the third summer. One three-year-old clump will furnish more than twenty plants and need not be carefully divided at that.

These, then, are hardy perennials; hardy without an "if" attached thereto. With them one can have bloom from spring into late fall. Moreover, these perennials relieve the gardener of constant care and afford him time to enjoy his garden in leisurely contemplation. With such a garden you can go off on a vacation and on your return find it none the worse for your absence.

# Wild Flowers for the Home Garden—By Elsie McFate, Pennsylvania

### SOME COMMON PLANTS OF OUR WOODS AND FIELDS THAT RESPOND TO CULTIVATION—EXPERIENCES IN TRANSPLANTING FROM THE WILD AND SUGGESTIONS FOR THEIR PROPER USE AROUND THE HOME

IF YOU will notice a foreign list of herbaceous plants, you will be amazed at the prices put upon our most common wild flowers. I have before me an English catalogue wherein I find the liverwort (*Hepatica triloba*) listed at eighteen cents each. This seems a great price to pay for a little flower which we may buy at home for four or five dollars a hundred and possibly twenty-five dollars a thousand; but when we consider its many uses, small wonder it seems to be prime favorite. It will bloom among smoke and cinders, grit and dust. Its handsome leaves make a delightful carpet under a ground-robbing beech. In fact, it takes so kindly to starvation, that we usually find the best specimens wedged in among the roots of a greedy beech tree. Therefore, the answer to the question of what will bloom under a tree, quickly resolves itself into *Hepatica triloba.* No rock garden is complete without this dainty spring flower, which will bloom in sun or shade and whose foliage remains green over winter. There is a vast difference between this and the acute leaved species which demands a humid atmosphere and an abundance of moisture. Hepatica even lends itself to society and gracefully submits to house culture. A few clumps carried in a frame or away from frost, and brought into heat in mid-winter will quickly bring forth a promise of spring by its dainty blossoms. I cannot endorse its merits as a cut flower, but a bowl of these sweet blossoms will bring a remembrance of childhood and the

*Hepatica triloba* blooms in earliest spring, even under the snow, and defies dust, grit and other unkind conditions

Virginian cowslip or bluebell (*Mertensia Virginica*) likes a moist situation. Its coming in spring is full of rich color and attractive form

woods from which we carried little bunches, loving them for many days.

Contrary to public opinion, I find that trailing arbutus (*Epigæa yepens*) may be safely transplanted from the mountains or frame. Bear in mind that it must always be lifted with its root system absolutely undisturbed. Herein lies the secret of its obstinacy. We take it up after a soaking rain, with mud, stones, moss or whatever surrounds it, and, as carefully as possible, shift it to a sheltered place and cover it from sun and wind for a whole season. A successful method of transplanting a quantity of arbutus sods may be carried out in the same manner in which the gardener moves his cucumbers from a frame: carefully lift and tightly fit it into a paper pot, or strawberry box, so that its removal may not jar the soil from the roots. Remove the box, sod and all, until the final uncovering a year later, when the visible remnant of the box may be removed. In like manner it may be shipped a long distance, if carefully boxed, so that the plant may remain firm in its position.

Contrary to the common idea, colonies of arbutus creep out into the open. These are the most desirable for removal, as they have become hardened by wind and weather. When established, arbutus makes a quick growth. Wintergreen (*Gaultheria procumbens*) may be treated in the same manner.

The great laurel (Rhododendron) and mountain laurel (Kalmia) are perhaps the most popular evergreen shrubs in cultivation, and are largely planted in masses, but instead of giving them a natural ground cover of arbutus or wintergreen, they are usually heaped together with an unattractive mulch which detracts much from their possible beauty.

I have quite an area grown over with common wood violets (*Viola palmata*, var. *cuculata*). My soil is of a stiff, dry texture — yet by an annual application of wood ashes, the stems of the violets are unusually long and the flowers large and handsome. This effect may be seen in woodland which has been burned over, and offers a suggestion for the gardener.

Fire pink (*Silene Virginica*) is a rock plant of rare merit. Some years ago I wanted a large quantity of it so I summoned my crew, consisting of a roustabout and two boys and went to a railroad cut where I had seen some fine specimens. After lunch on the rocks and an hour's work we found we were in the animated region of copperheads. Immediately my crew deserted me to a man, and I was obliged to finish the work alone. What a glowing picture those two thousand blooming fire pinks make along the sunny hillside of the city park to which they went! I hope they are overhung with huckleberry and laurel. I have seen *Silene Virginica* light up a dark laurel ridge like a thousand fires, and this planting by nature I commend to those who wish to grow a glorious rock picture on a grand scale. The culture of this plant is very simple, its only requirement being perfect drainage. Robinson tells us that the best plants are grown from seed, but I find that equally good plants come from division. It responds so well to cultivation that a small root will grow into a good clump in one season. It will thrive upon a hot rock, sending its long root down a crevice to gather moisture and go on doing double duty by growing a handsome tuft of evergreen foliage.

I have never been able to grow our lovely dog tooth violet upon my dry hillside and have never used it in my small rock garden, as I like it best where I find it — along meadow brook or in their marshy woodland.

There is a companion to this flower in its moisture loving nature that must not be overlooked — the Virginian cowslip or blue bells (*Mertensia Virginica*). Gertrude Jekyll has painted it in her woodland pictures so exquisitely that I have asked her kind permission to quote from "Wood and Garden." "The Virginian cowslip is the very embodiment of early spring. The sheaf of young leafage comes almost black out of the ground, but as the leaves develop, their dull, lurid coloring changes to a full, pale green of a curious texture, quite smooth yet absolutely unreflecting."

To me it is a pleasant surprise to come suddenly upon the aromatic fragrance of wild ginger (*Asurum Canadense*). The plant is so modest in growth that it may be quite overlooked in midsummer. It seems to me best in groups among rocks or as an edging to spring flowering borders. Its handsome leaves contrast well with bleeding heart (*Dielytra spectabilis*) and plants of tall, showy growth. Adversity will not subdue it, when grown about dwellings. It is good to plant along a common path where one may brush against it and sometimes tread upon its fragrant roots.

### NURSERY VS. COLLECTED PLANTS

There are several reasons why nursery grown native plants should always be preferred to plants from the woods. First, no pains should be spared to keep our wild flowers where nature grows them; when we copy her excellent methods of planting we have no right to rob her gardens of valuable treasures. In the second place, a nursery grown plant, by reason of constant cultivation, has developed a sturdy constitution not likely to be disturbed by removal. Again, it is cheaper to buy plants than oft-times to travel many miles and spend much time without finding a single specimen, as I have done to my disappointment.

The trailing arbutus, or mayflower (*Epĝaea repens*) may be safely transplanted if the roots are not disturbed. Better take pieces that have run into the open

There is genuine pleasure in growing wild flowers from seed, and in many instances this is highly recommended, as stronger plants are often grown from seed than by division.

Dealers in American flower plants offer seed with directions for their culture, therefore, it is a simple matter to become familiar with our native flowers, many of which will soon be lost by the onward march of civilization.

# Perennials for the Shady Nook — By Norman Taylor, Curator of Plants Brooklyn Botanic Garden

NEARLY FIFTY PLANTS THAT WILL FLOWER WITHOUT FULL SUNSHINE — USE THIS LIST AND REDEEM THE NORTH SIDE OF THE HOUSE WHERE MOST OF THE WELL KNOWN FAVORITES WILL NOT THRIVE

The bloodroot is attractive in both foliage and flowers

WHY should we always have ferns, and nothing but ferns, for the shady nooks of our gardens? Why this monotonous riot of finely dissected foliage? I protest against it. Not that ferns are not fitting decorations for places that apparently will grow nothing else, but why not occasionally have flowers as well? It can be done with as little trouble, or less, than the cultivation of ferns.

In choosing flowers for shady situations what more natural than to take those that grow normally in the shade? And it will be seen, from those suggested below, that most of them are plants whose original home was the woods. No matter how much horticultural practice may have changed their colors and forms, they will always respond to an environment approximating their ancestral homes. The north side of the house, under the shade of some trees, and along the shady sides of walls — all these are especially appropriate places to start our shady-nook garden. And a succession of bloom will reward the gardener who plants with discrimination and care.

To have a succession of flowers from the earliest trace of real spring up to the end of April, the following may be planted:

*White-flowered.* The common bloodroot of our woodlands (*Sanguinaria Canadensis*) has special charm for the lover of our native plants. It will thrive best in good rich leafmold, and in the most shaded places. Grouped with, or near, it the white dog's-tooth violet (*Erythronium albidum*), requiring similar treatment, makes an effective accompaniment. Where they can catch an occasional gleam of sunlight, the mitre-wort (*Mitella diphylla*) and our beautiful native hepatica (*Hepatica triloba*), which often shows traces of a delicate violet in its flowers, will do exceedingly well.

*Yellow-flowered.* Among numerous yellow flowered herbs, few bloom early in the spring and fewer still are at home in the shade. The jonquil (*Narcissus jonquilla*) and its many varieties can be successfully grown in such situations, especially if the soil is not too dry. The native dog's-tooth violet (*Erythronium Americanum*), grouped with the jonquil, or some of the white flowered sorts, makes a quiet but beautiful showing. From seed this so-called violet plant takes three years to produce flowers, all the single-leaved and double-leaved plants being respectively one and two years old and flowerless. It spreads rapidly when once established.

*Purple and blue-flowered.* Under trees or shrubs, or along the north side of walls groups of the very early flowering *Bulbocodium vernum*, with beautiful rose-purple flowers, can be freely used with splendid effect. The bulbs should be planted in the fall and covered with leaves during the winter. For shady places it is more desirable than the crocus, a near relative.

The beautiful azure blue of one of the wood flowers (*Anemone nemorosa*, var. *Robinsoniana*), makes its cultivation for the shady nook especially desirable. Ordiary garden soil, moderately rich, will maintain a splendid growth of what is perhaps the only early blue flower that will stand deep shade.

### FLOWERS OF MAY

Most of the following begin and complete their flowering during May. Some few continue on into June, but nearly all are true spring flowers, and, unfortunately, do not last more than a week or two.

*White-flowered.* Some of these thrive in ordinary garden soil, and although shade plants, do better for an occasional glimpse of the sun. The European Star-of-Bethlehem (*Ornithogalum Narbonense*), with a stem scarcely two feet tall, and often supporting a cluster of 40 to 80 flowers, is unique among its bulbous relatives. Bulbs should be planted in the autumn, and weathered over winter with leaves and manure.

The snow windflower (*Anemone sylvestris*) with only one or two large nodding flowers is especially suited for moist places. The flowers last well into June and July. Then, of course, there is the beautiful, but sadly overworked, lily-of-the-valley. "Pips," planted in the fall make good plants with reasonable care.

Six of these white, May-flowering herbs are typical woodland plants and for successful culture demand a good mixture of leaf mold and rotted sods. The less cultivation they get the better, and it is profitable to let decaying leaves work naturally into the soil. The shy may-apple (*Podophyllum peltatun*) grows naturally in the deepest woods and will thrive best in situations approximating the forest (leafmold, undisturbed growth, and deep shade). Less exacting are the red, and also the white baneberries (*Actaea rubra* and *A. alba*). Both may be grown in partial sunlight, but should be grown in leaf mold. These close relatives are distinguished by, and take their names from, the red and white berries which stay on well into August. Perhaps the most beautiful of our native plants is the foam-flower (*Tiarella cordifolia*), and its natural home on moist shaded banks, makes it easy to grow in the shady nook of the garden. Less showy, but botanically interesting, is the solomon's seal (*Polygonatum biflorum*) requiring similar conditions, and, with the foam-flower, being partial to leafmold.

The European Star of Bethlehem runs freely in pastures and under the shade of trees

Without this necessary soil, also, the nodding wake-robin (*Trillium cernuum*) can never be successfully grown. Left to themselves plants of the latter will develop into beautiful patches of nodding white, and purplish-white color.

*Purple or violet flowered.* Without much special soil preparation the wonderful European dog's-tooth violet (*Erythronium dens-canis*) can easily grow to be a delight in a suitably half-shaded place. It spreads rapidly and from a few bulbs great results may be attained. Contrasted with the rose-purple flowers of this little known foreigner our native lungwort (*Mertensia Virginica*) makes a harmonious contrast. It also requires half-shade. Moist situations, too, are preferable, not only for the lungwort, but also for the great Russian violet. The latter, a perfectly hardy, double-flowered favorite, all too little known in this country, has splendid fragrant blossoms.

More difficult of cultivation, as they require the woodland conditions of undisturbed growth, and deep shade, is our violet wood-sorrel (*Oxalis violacea*) which will make a beautiful carpet of rose-purple flowers. Growing naturally with it in the woods one would find the erect wake-robin (*Trillium erectum*) and another sort (*Trillium recurvatum*). The first with purple-pink, and the latter with dark purple flowers are excellent additions to our list. The recurvatum has its flowers half hidden among the dark green foliage, while in erectum, as its name implies, the flowers stand straight up. All these will thrive best away from the sea-coast.

*Yellow or orange-flowered.* From Siberia comes the orange globe-flower (*Trollius Asiaticus*) which will thrive in any rich shaded garden soil, and may profitably be allowed a little sunshine. From nearer home we get the yellow clintonia (*Clintonia borealis*) and the bellwort (*Uvularia perfoliata*), also yellow. Both are from our native woodlands, and both require a fair imitation of forest conditions for successful culture. The clintonia is partial to elevations of 1,000 feet or greater, but the bellwort may be grown anywhere.

The European globe flower, lemon yellow. One of the best of the few summer bloomers in shade

JUNE FLOWERS

A half-dozen June flowers do their best in just such situations as are outlined above for clintonia. The shooting star (*Dodecatheon Media*) with white flowers, and also the most popular of all trilliums (*T. grandiflorum*) make a wonderful showing in a year or two. Of botanical interest, also white-flowered, is the curious cohosh (*Caulophyllum thalictroides*) allied to our common barberry. Its delicate three-leaved foliage and long spike of flowers are welcome additions to the host of shady nook favorites. Less noteworthy are the cucumber root (*Smilacina bifolia*) with only two leaves and tiny white flowers, and the taller, almost weedy, meadow-rue (*Thalictrum dioicum*), useful where wild effects are sought. The latter will stand almost any amount of shade, while it is accommodatingly at home in the sunshine as well. The wonderful yellow ladies'-slipper (*Cypripedium hirsutum*) is especially well worth cultivating, but is difficult to establish. Only large clumps should be attempted, and it will always prove advantageous to buy them from some dealer, rather than to collect them. Never cultivate them, nor otherwise disturb the leaf-covered soil.

The wakerobin, the best of all the trilliums; flowers in June and will increase rapidly in shade

All of the following June flowers may be grown in ordinary garden soil.

The snow windflower is the spring counterpart of the Japanese anemone. Prefers a moist soil

*Purple or scarlet-flowered.* Among the wind flowers few equal the great scarlet species from France, *Anemone fulgens*, and since it is practically the only plant of this color which may be grown in the shade, it is unique for our collection. Not many American dealers carry this, and unfortunately it does not seem able to endure any length of time. The Himalayan *Delphinium Cashmirianum* with purple or rose-purple flowers is especially attractive, but should not be attempted below elevations of 2,000 feet. For the country place in the mountains it should prove excellent. Our common twisted stalk (*Streptopus roseus*) is also partial to higher elevations, but may be grown lower down, if the situation is not too dry and windy.

*Blue-flowered.* Jacob's ladder (*Polemonium reptans*) can scarcely be grown anywhere but in the deepest shade and with its splendid bright green foliage, overtopped by a cluster of deep blue flowers it is an attractive acquisition. From the Old World comes the Siberian lungwort (*Mertensia Sibirica*) a beautiful purplish-blue relative of our native species. It is not very common in the American trade but very generally carried abroad. The monkshood (*Aconitum Napellus*) the bluest of all its large family should be in every shady garden. Because of its violently poisonous properties keep the children and the household pets away from it. Few plants equal it and its many varieties are dressed in various hues of white, and blue and white, with every degree of variegation.

SUMMER FLOWERS

Very few of our shade plants flower during July and August. Two white flowered forms, requiring again, the best imitation of the woodland obtainable, are the showy ladies'-slipper (*Cypripedium reginæ*) and the snakeroot (*Cimicifuga racemosa*). The former is not easy to grow and without a good start, with a number of plants, it is impossible to get it established. The snakeroot, having spikes 3 to 4 feet tall, is much more easily grown. Another native plant, the harebell (*Campanula rotundifolia*), with blue flower and slender linear leaves, is useful. It will thrive best among rocks or on rocky ledges.

For the shaded corner few plants excel Lyon's turtlehead (*Chelone Lyoni*), a plant rarely more than a foot in height with wonderful red or rose-purple flowers. The variety *speciosa* with pink flowers is a pleasing form well worth cultivating. From Europe we get the globe-flower (*Trollius Europæus*), with delicate lemon-yellow flowers and leaves not unlike our common buttercup, to which it is related. The globe-flower will be at home in most garden soils, preferring somewhat moist situations for choice. In similar situations and responding to similar treatment, the Asiatic woundwort (*Stachys grandiflora*) will easily thrive. Its large showy flowers of bright violet will add a pleasing dash of color to our shady nook. It frequently flowers well into September and is the last of the plants suited to these conditions to maintain color in our garden.

By following the outline given above, with suitable grouping of species, such as suggests itself to gardeners of taste and a sense of harmonic values, one can easily transform the conventional be-ferned shady place into a real flower garden.

If you are still wedded to the foliage idea vary the monotony with the dark, kidney-shaped leaves of the wild ginger (*Asarum Canadense*) or the shining tiny leaves of the periwinkle (*Vinca minor*). If you live south of Philadelphia the galax leaves (*Galax aphylla*) make a pleasant contrast with their copper-colored foliage. The red berries and small leaves of the partridge-berry (*Mitchella repens*) will make an interesting carpet underneath most of the perennials mentioned above.

# Long-Lived Evergreens for Gardens — By Wilhelm Miller, New York

SOMETHING BETTER THAN THE CHEAP, SHOWY, QUICK-GROWING KINDS WHICH ARE SO UNSATISFACTORY IN THE LONG RUN

SINCE evergreens cost more than other plants it is well to consider them first. The common way of selecting them is to go to a nursery and pick the most attractive specimens. Unfortunately the most attractive evergreens in nurseries are, as a class, short-lived. The evergreens which appeal most to a beginner are those which have the showiest colors and the most unusual forms. To the first class belong all the blue, golden and variegated evergreens, of which the most famous is the blue Colorado spruce. To the latter class belong all the pendulous dwarf and columnar evergreens, e. g. weeping hemlock, dwarf spruce, red cedar; and all the evergreens of remarkable texture, especially the Japan cypress, or retinisporas, which imitate threads, fans, feathers, ferns, club-moss, heaths, and other striking forms.

Unhappily the popular choice means bad economy. For the showiest evergreens are so short-lived that we ought to think of them as temporary bedding plants, which may be satisfactory from five to ten years. Even the wealthiest people are wont to grow tired of renewing these costly plants as soon as they become ragged. It is better economy to plant long-lived evergreens.

The most valuable dwarf evergreen, the Japanese yew. See also the illustration on page 313

Moreover, the popular choice means bad art. I grant you that these plants may be perfectly beautiful in themselves, and I have no quarrel with people who plant them in a garden that is enclosed by a high wall or hedge. For, these horticultural varieties originated in the garden and therefore the most appropriate place for them is the garden. But the great trouble is that we Americans fill our yards with these showy foreigners which make our homes stand out in gaudy contrast with the environment, whereas native American evergreens would make our homes harmonize with the landscape.

Therefore, blue, golden, and variegated evergreens should be confined to gardens. But even there, longer-lived evergreens are in better taste, because they cost less to care for. The more temporary plants we employ the more our garden will suggest extravagance and waste. The most artistic garden materials are those which cost the least in the long run.

The ideal way of selecting evergreens is the landscape gardener's method, i. e. to consider the various purposes for which we need evergreens and select the best kinds for each purpose. For example, we should consider: first, whether our garden needs a windbreak; second, how we shall enclose it; third, how to get the finest views from and in the garden; fourth, how to make it attractive the year round; and fifth, how to connect house and garden.

### EVERGREENS FOR WINDBREAKS

Every garden needs a windbreak to protect it from cutting winds and frost. You can have vegetables a month or so earlier in spring and sometimes two months later than your neighbors in the autumn if you are sheltered from the prevailing winter winds. The ideal windbreak, usually, is an eight-foot wall of brick or stone, but the first cost of this is usually prohibitive. Perhaps the house will shelter the north side and a wood the west. If you can afford to move large evergreens so as to get shelter immediately you may perhaps solve your problem with a dozen white pines 8 feet high and 5 to 8 feet wide for about $140. If you are willing to wait three years you would better buy a dozen pines 5 feet high for $20. You will be tempted to buy the cheapest and quickest-growing evergreens, which are usually the Scotch and Austrian pines or the Norway spruce. These were once planted by the million for windbreaks but at thirty years they get thin and ragged and then become eyesores. Pay more and plant the longest-lived evergreens native to your region, e. g. above Cape Cod, the white spruce; in the latitude of New York, white pine or hemlock. These usually grow rapidly enough. If not, perhaps you can mingle with them some tall-growing deciduous trees, for a dozen red or sugar maples 8 feet high will cost only $6 or $7. If these hints are insufficient send to Washington for "Windbreaks," by C. G. Bates, which is Bulletin 86 of the Forest Service. Or consult Bailey's "Principles of Fruit Growing."

### EVERGREENS TO SURROUND GARDENS

The ideal garden has good views. Even if you have eight-foot walls you can see over them from the middle of the garden and it is pleasant to see a beautiful house, a church steeple, or some fine trees. If you plant a single row of evergreens on two sides of your garden you will spoil the view, because straight lines of one kind of tree make a hard, artificial, monotonous sky-line. Therefore, groves, groups and shelter belts are more artistic than rows. And if you blend the evergreen and deciduous elements, each will set off the beauty of the other, and you will have more variety the year round.

The noblest tree that can be seen from a garden is, in the opinion of the Old World, a majestic cedar of Lebanon — the most famous example of longevity in the world. But each region may well prefer the best tree of its own. In the East the noblest evergreen may be white pine, hemlock, white spruce, or red pine. In the Piedmont section it may be Carolina hemlock. Among the Western mountains it may be Douglas or Engelmann's spruce, or the concolor fir. These are longer-lived and more dignified than the showy evergreens, such as Colorado spruce. And, if you wish, for variety's sake, a few foreign trees of proved merit, choose them from an allied climate, not a hostile one. For instance, let Easterners choose evergreens from the Caucasus, Japan and China, e. g. Oriental spruce, Nordmann's fir, etc., not the silver fir, Scotch pine and other trees of Europe.

Fortunate are those who may view a natural wood from their garden, for this is perhaps the ideal. Some, however, would say that the richest sight is a collection of evergreen trees in a great variety of colors, outline, and texture. Nothing is more picturesque than old evergreens. nothing is more symmetrical than young evergreens. And it is pleasant to have both types of beauty. Few realize the value of old evergreens. I know a certain white pine for which the nurseryman asks $500. This is 47 ft. high, has a spread of 33 ft., and will save somebody half a century of waiting. For $100 you can get a 20 ft. white pine, white spruce or Nordmann fir, which means a saving of about 25 years. A good many Americans are now willing to pay $100 for a fine tree to be seen from the garden, and the twenty-foot specimens above mentioned are better bargains than a Norway spruce at $40 or a Scotch pine at $20.

What a site for a garden! Red cedar for a windbreak, to frame vistas, and to act as a background for flowers. At Oyster Bay, Long Island

### EVERGREENS FOR HEDGES

Most beginners believe that the ideal enclosure for a garden is an evergreen hedge about eight feet high. In my opinion a brick or stone wall is more efficient, permanent, artistic, and in the long run economical. For, hedges get bare at the base and it is difficult to patch them; they do not keep out thieves and animals as well; they finally sicken from being cut back to an arbitrary line; they rob the garden and increase the cost of feeding, watering and trimming, and finally they present a relatively uniform background for flowers, whereas a wall covered with ivy, climbing euonymus, trained fruits and vines has greater variety of surface.

However, there is no arguing against heart's desire, and most Americans who have visited England have set their hearts on a yew hedge, because of its dark polished leaves and its air of venerability, which is largely due to the rich modelling of its foliage masses. European yew does not thrive in New England, and our nearest substitute is the Japanese yew (*Taxus cuspidata*). But any yew involves a longer wait than most Americans are willing to endure and the common substitute for it is hemlock, which has leaves of similar form and texture. In Canada, arborvitæ is considered the best evergreen hedge, but only because it is hardier, for the winter color of hemlock is much livelier.

If you are inclined to be irreverent about old things may I ask how you would value a hemlock hedge forty years old? Suppose you had a perfect one 8 ft. high, 8 ft. thick and 160 ft. long. You might ask $2240 for it, or $14 per lineal ft. delivered and guaranteed, provided it is as good as the hedge I know. This hedge has been root-pruned many times, and is divided into numbered sections. There is no hole in the base where a cat may get through and the top has been trimmed to a point so as to shed the snow. Some day a millionaire will come along and buy that old hedge to give the mellowness of forty years' growth to his new garden.

Personally I should prefer to wait for Japanese yew, because of the richer texture and modeling, and because the slower a plant grows the more centuries it will live. I have all the time in the world and the older I get the less I hurry. I am never impatient any more because slow-growing evergreens are so small, since there is no

A dwarf Japan cypress known as *Retinispora obtusa*. These cypresses are the showiest and most popular of all dwarf evergreens, but are short-lived

satisfaction in this world like that of plant-the right kinds of trees — the ones that will thrive for centuries after the cheap, quick, gaudy kinds have perished. But I should plant Japanese yew only for dividing lines between the compartments of an estate not in the garden, for the weight of English authority is against yew in the garden, because it robs the soil and, therefore, increases unnecessarily the yearly cost of maintenance.

### EVERGREENS FOR GARDEN VISTAS

The smaller a garden the fewer and smaller should be the trees in it, since trees rob flowers of food, drink and sunshine. Consequently the columnar evergreens are especially valuable because they take little room and cast no harmful shade. The most famous of these is the Roman cypress which does indifferently in our Southern states. Our best tree for the purpose is red cedar and next comes arborvitæ. The great temptations are Irish yew and Irish juniper, which are so effective in Europe, and so short-lived here.

Perhaps you can frame the best vista from your garden by means of two groups of red cedars — say three in a group. But, before you decide, ask some artist whether your view should be framed by vertical or horizontal lines. Perhaps white pine would be better because of its marked horizontal branches. The ideal, if your climate warrants, is cedar of Lebanon or its equivalent, e. g. Sargent's hardy form of it or the Mt. Atlas cedar.

Most gardens, however, have no good outlooks, and therefore the vistas inside the garden become doubly important. The finest object in the garden eventually, will probably be the tallest evergreen tree, like the deodar in the centre of a famous Southern garden. You will often see small houses dwarfed by tall trees, and small gardens spoiled by a tall Norway spruce in the centre. A tree of medium height is usually in better proportion and a pair of Japanese yews may be the ideal. This thought is suggested by the venerable pair of English yews at Haddon Hall of Haddonfield, N. J. These trees are over 200 years old and are the heroes of the garden.

Another way to improve vistas within the garden is to have some beautiful object terminate every walk. Here you want some object at about the height of the eye, e. g. a fountain, arbor, seat, or some low evergreen of richest texture, like Fortune's yew (*Cephalotaxus Fortunei*), Japanese arborvitæ (*Thuya Japonica*), mugho pine, umbrella pine, or Chinese arborvitæ (*Thuya orientalis*). But be sure you have the right conditions of sun, shade, shelter and moisture for these aristocrats.

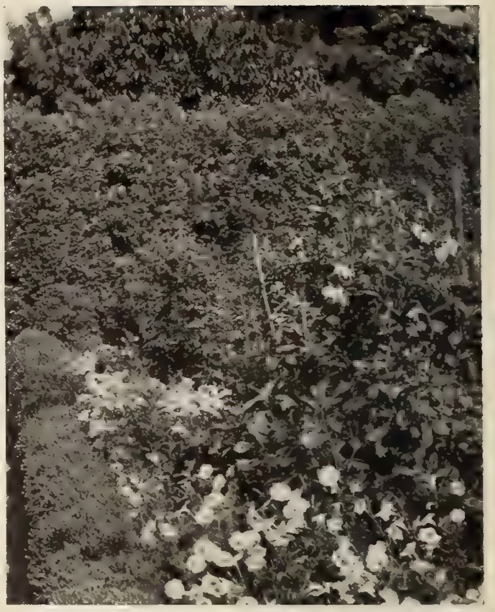
A third way to improve the vistas is to consider the skyline. Break up monotony by means of arbor, summer house, vines on the wall, or evergreens at the four corners.

A fourth way to multiply vistas inside a garden is to use arches. The normal material for an arch is a vine, but I have never seen an arch of evergreen vines in the north and doubt whether it is practical to use English ivy or climbing euonymus in this way. Within the last decade red cedars have been trained to arches. They have been used by Dr. and Mrs. Peter B. Wyckoff at Southampton, Long Island.

### EVERGREENS FOR YEAR-ROUND BEAUTY

The special value of evergreens is that they make a garden beautiful and comfortable in winter when we need extra inducement to exercise outdoors. Unfortunately there are cheerless and dismal evergreens, as well as cheerful ones, and many a garden is ugly in winter because they are overhung by climatic failures, e. g. Norway spruce, and the Scotch and Austrian pine which get thin, brown, ragged, and sickly in twenty or thirty years. The cheerfullest evergreens in winter are the healthiest and most robust ones, e. g. white pine, concolor fir, Douglas spruce, red pine, Carolina hemlock, Nordmann's fir, and Japanese yew.

Norway spruce, another type of the short-lived evergreens which are irresistible to beginners because the cheapest and prettiest in the nursery



This garden would be very tame without the tall hedge of arborvitæ that surrounds it. Pink petunias and box edgings at the Peters place, at Islip, Long Island

Unhappily our own red cedar and arborvitæ get rather brown and dingy in winter and therefore it is a mistake to use them exclusively as many do. Moreover, lovers of symmetry and color are naturally attracted to the dwarf varieties of the arborvitae, e. g. the silver, golden, globose, pyramidal, pendulous, and crested. I once saw twenty-five varieties of arborvitae, all very showy in the buying season, but dull and dead-looking in winter.

The most surprising winter colors are produced by the Japan cypresses or retinisporas, for some of them take on steely grays and blues while others run through various shades of bronze. The climax of showiness is the dwarf golden Chinese cypress, called by nurserymen *Biota nana aurea*, which achieves a bright red near New York, but at a certain cost in hardiness. Indeed the bronzing of evergreens is generally a sign that they are near the limit of their hardiness, and therefore they are more or less unhappy. Therefore, while I yield to none in admiration of retinisporas, I would have few or none in my ideal garden, because they are inclined to look shivery in winter, as contrasted with warm, lusty and longer-lived plants mentioned under the next heading.

### DWARF EVERGREENS FOR BEDDING

Mr. Bowditch of Boston is said to be chiefly responsible for the popular taste in dwarf evergreens as he introduced the practice of using beds of gaily colored evergreens in front of houses, at entrances, and in the parks. Here again the favorites are retinisporas and fancy kinds of arborvitæ. Nothing could be more symmetrical or brilliant while these plants are young, but do you and your heirs wish to renew them every five or ten years? They will fill your garden with color the moment they are planted, and color is appropriate in a young garden. Also they last longer than many flowers. But the older you grow the less stress you lay on color and the more you value dignity, permanence, ease of maintenance. Then you will come to love the long-lived set, e. g.

Trailing yew, or ground hemlock (*Taxus Canadensis*).
Japanese yew (*Taxus cuspidata* and var. *brevifolia*).
Canadian juniper (*Juniperus communis*, var. *Canadensis*).
Procumbent Chinese juniper (*J. Chinensis*, var. *procumbens*).
Mugho pine (*Pinus montana*, var. *Mughus*).

The list is small but I cannot conscientiously increase it. Perhaps the nurserymen will some day add a dwarf fir, spruce, and hemlock, and arborvitæ that are long-lived under ordinary conditions.

### EVERGREENS FOR DECORATIVE EFFECT

By "decorative" we mean symmetrical, formal, architectural. The larger a garden, the greater the need for evergreens in receptacles of the same material and color as the house, so as to connect house and gardens. Also, the greater the need for evergreens trimmed in geometrical shapes, e. g. dome, pyramid, cube, pillar, globe, etc. To select such material it is necessary to visit a large nursery, but amid its distractions it is well to keep firmly in mind the following principles.

The hemlock is the best native counterpart of the yew hedge of the Old World

The less trimming there is to do every year the better. It is more artistic and economical to select plants that naturally approximate a dome or pillar, and trim them little or not at all. Thus you get rich modelling and the appearance of age, instead of stiffness.

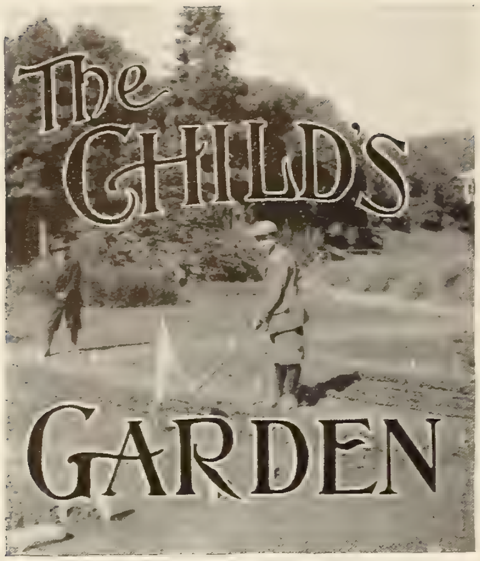
Choose only simple forms. Fantastic forms, e. g. birds, fish, men, etc., suggest the grotesque, ludicrous, extravagant. The Hunnewell Italian garden is the oldest example of topiary work in America. Nothing more elaborate than that is needed in America.

People of wealth let their enthusiasm for such things run away with them. A garden filled with pairs and quartets of plants in tubs suggests extravagance and makes what is called a "checkerboard" or "chessboard garden."

And, do not forget the picturesque, little Japanese evergreens in jars and vases. Possibly you need something of the sort on the garden wall, steps, verandah or terrace.

Finally there is another class of evergreens, viz., the broad-leaved kinds, such as box, rhododendrons, laurel, and holly. These plants are even more sumptuous and costly, as a rule, than conifers, because many of them produce gorgeous flowers or brilliant fruit. But they generally require special soil and other conditions. Therefore we have left these to be treated at some other time.

Hunnewell place at Wellesley, Mass., showing at the left the short-leaved variety of Japanese yew (*Taxus cuspidata*, var. *brevifolia*). The English yew is not hardy in New England gardens, and the Japanese yew promises to be the longest lived and most valuable evergreen



CONDUCTED BY ELLEN EDDY SHAW

## Connecticut's Contribution to the School Garden Movement

VERY early in the school garden movement, Connecticut established a garden at the Willamantic Normal School. For twelve years, the Hartford School of Horticulture has continued to give to the boys of the Watkinson Farm School (on adjacent property) and to about a hundred city children, boys and girls, school garden instruction; to Hartford Teachers in Saturday classes, and, recently, to New Britain Normal School students in visiting classes, training in school garden work; and to adult men and women of Hartford at nominal fees small plots of ground, use of tools, seeds and expert advice in planting them. This school (in charge of Mr. Stanley H. Rood) was founded and endowed by the Rev. Dr. Francis Goodwin primarily for the benefit of the Farm School boys. For them, there is a graded course in horticulture of four or five years. City children, who continue their gardens for several seasons, follow in a general way this course. Their individual plots vary from 10 x 20 to 10 x 50 ft. This was the first school garden in the East, if not in America to demonstrate that every garden should aim to possess, even though on a very small scale, individual plots, observation and experimental ones to contain typical flowers, vegetables, decorative and economic plants; that there should be plant groupings (whether as annuals and perennials, as plant families or colonies, etc.); and, wherever possible, that there should be small fruits, tree nursery, grape culture, and culture under glass. This garden like many European ones, keeps bees.

In addition, the City of Hartford supports from April to October two school gardens for some 300 children. They are taught by public school teachers who have selected from a list of those who have attended the School of Horticulture.

The Connecticut State Agricultural College at Storrs offers a summer school course in agriculture and nature study with practice in the children's gardens.

New London in 1912, will have in connection with her public schools five gardens each accommodating about 30 children of the second and third grades. The Oral School for the Deaf, Mystic, has a school garden somewhat like the Trinity Garden School, New Haven, in its general scheme of planting and that stress is laid upon its decorative side.

Inspired by hearing that the Oral children were to have a garden and encouraged by their visiting teacher of drawing, the children of West Mystic, Poquonnock, Noank and Monument School, Groton, took up gardening. Noank school had a garden and there were in all some 280 home gardens.

Gardening interest in New Britain centres more in home gardens since they prefer to keep the front of their school grounds for flowers or shrubs and the rear for playgrounds. However, the principal of the East Street School has had a garden for 250 children the past season.

Waterbury has two large gardens for the use of the regular classes in her public schools to the number of between 700 and 800 children.

New Haven has from 200 to 300 children interested in home gardens through the prizes offered to school children by the school garden committee of the Civic Federation. The gardens are inspected by Normal School students.

Trinity Parish, New Haven, has for the last two years conducted a school garden in connection with its summer work at its Vacation Cottage at Morris Cove, some few miles out of the city. The garden accommodates some 70 to 80 children. The garden is laid out with large, cool cement summer house, with rustic pergola and with a large number of flowers and economic plants. A large cottage garden adjoins the children's 8 x 16 ft. plots. Informal instruction upon the life in the garden is given. It has interested many of the Cottage visitors and others from the summer colony and elsewhere. The children of the Morris Cove Public School are admitted.

The New Haven Orphan Asylum has a compact 80 x 80 ft. school garden for 36 of the older children (under 18) with 6 x 8 ft. "farms" and 3 x 3 ft. "flower gardens" for each child. In its borders are many flowers and a considerable number of the economic plants of which the children hear in school.

M. LOUISE GREENE,
*State Chairman of National School Garden Association.*

New Haven, Conn.

New Haven Orphan Asylum garden: 36 children with vegetable gardens, 6 x 8 ft.; flower gardens, 3 x 3 ft.

## Suggestions for this Month's Work

SOW seeds of beans, beets, radishes, peas, lettuce, sweet corn and cucumbers in June.

(2) In the flower garden sow seeds of ten-weeks stock and pansy. It is well to consider the appearance of the garden in August. Late August is usually a shabby time in the flower garden. So make a second sowing of such annuals as marigold, phlox and nasturtium.

(3) As soon as the weather is settled the house plants may go out doors. Put the pots and all into the ground in a rather shaded part of the garden. This is a good way to provide for the school house plants during the long vacation. But ferns do far better if left within the school house to be cared for by the janitor, if this be a possible arrangement. Ferns get badly wind tossed.

(4) If the house plants and the outdoor plants need a little extra stimulus try nitrate of soda. One teaspoonful to three gallons of water is the right proportion for use, or put a pinch of the salt into a quart of water. Use this once a week.

(5) If you are making a water pond this year you will find arrowhead, water cress, blue flag and sweet scented water lily satisfactory plants to use. These flower in June. Where several different kinds of plants are used in one pond it is well to plant each kind in a separate box or partition, and sink this contraption. In this way the roots of the different plants do not intermingle and the stronger kinds choke out the weaker. If you cannot build a fine cement pond this season try a barrel one. Cut a barrel in two. Sink the lower half in the ground, nearly fill it with earth, then fill in water. Plant in this pond water hyacinths. Their roots will strike down into the mud.

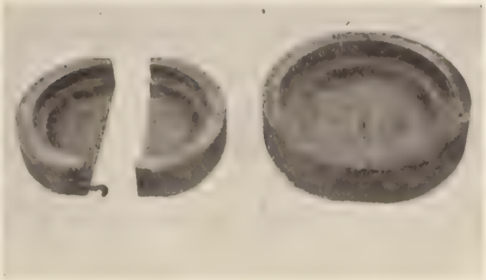
(6) Add to the wild flower garden these June bloomers buttercup, lupine, wild geranium, daisy, soapwort, and great Solomon's seal.

(7) How would a rockery look in the school yard? If you make one be sure to have the soil right and plenty of it. A good soil receipt to use for the rock garden is two parts of garden soil, to one of sand, to one of leafmold. The cigar plant, vinca, ferns, begonias, portulaca, candytuft, baby's breath, clarkia, and nasturtiums do well in a rock garden.

(8) An outdoor window box adds to the looks of the house. The box should be 8 inches deep, otherwise make it to fit the window. Use $\frac{7}{8}$ or inch lumber and be sure to paint the box. Add to every half bushel of soil you use in filling these window or porch boxes one cup of bone meal. This adds extra goodness to the soil, much needed under window box conditions. If the box is to be in the shade, Boston ferns, fuchsias and begonias may be used and for a trailer use "little pickles." For the sunny exposure box use *Vinca minor* or tradescantia for trailers; nasturtiums for a climber; alyssum, verbenas, heliotrope, petunias, snapdragon and geraniums for body effect. Lemon verbena adds a delightful odor to the little garden.

(9) As you transplant seedlings from place to place in the garden, try taking up very small ones in groups. After the little group of seedlings has become at home in its new spot thin out until only the strongest plant of all is left. The ordinary little wooden label is a first class instrument to use in this work. Also use the same little label for drill making and cultivating between plants. Cut back the leaf area of lettuce seedlings one half. This method reduces the work the leaves have to do and gives the root system a better chance to work without heavy drain. Shelter the seedlings in the first days after transplanting. The sun's rays are too strong for them just at first.

Home-made hanging basket for the porch; simple and effective


Square boxes may be used in place of these molds and thus reduce expense of the sundial

*If you are interested in doing some garden work, read Lady Greensleeves's letter on page 328.*

## Another Home-made Basket

SOME of you girls might like to make a hanging basket like the one I made. To make this little plant basket shown in the picture cut eight stakes twelve inches long and make the centre exactly the same as the one for the gathering basket. (For the directions turn back to your December Garden Magazine where I gave them when telling about my gathering basket.) After this has been done take No. 1 weaver and do the regular over and under weaving. It may be woven up as far as one wishes, being sure to shape the basket as you weave. The edge is made the same as that of the gathering basket, only be sure to put the handle in before making the edge.

Do not forget and cut off the stakes beside which you insert your handle. Then bind in your handle so it will not come out, and the basket is completed. Your basket may be stained any color you wish. It looks better when you stain it. There is a regular wicker stain which can be procured at any paint store.

Newton, Mass. M. E. S.

## How To Make Your Own Sundial Pedestal

SOME of you boys and girls might like a sundial in your gardens, and make the pedestal at home as I did.

The first thing to do is to get the molds. The top and bottom molds are shown in the picture. The shaft mold is a piece of sheet iron about two feet high, rounded like a stove pipe, smaller at the top than at the bottom. The top measure is eight inches, the bottom measure is eleven inches. This mold any tinsmith can make easily. The height of your mold is four inches.

When these molds are all ready the next thing to do is to get your sand, gravel, and cement. The proportions for mixing are one quart of cement, two quarts of sand, and three quarts of coarse gravel. This rule is commonly known as "one, two and three." Mix materials thoroughly together while dry. After they are mixed add water. Do not make this mixture sloppy. Make it more like soft clay. After this is done fill the molds. Make cement enough in the proportions of the table. Let the molds full of cement stand about three days. Then they will be ready to take apart.

Before filling put a small block of wood on the top and bottom molds. Have the block about $1\frac{1}{2}$ inches square. Be sure and put the block in the centre of the mold. In the pedestal put a block in both top and bottom. The holes the blocks make are to put the cement in when joining the shaft to the top and bottom pieces. If any boys cannot afford these molds, they might use square boxes about the same size as my moulds.

The height of the pedestal is about three feet when it is all put together.

West Newton, Mass. Jackson Shaw.

The sundial and pedestal standing on the edge of a cement lily pond.

Readers' Experience Club

(EDITOR'S NOTE.—*We want to know how successful workers do things in order to put actual experiences before our thousands of readers in all parts of the country. Every reader is invited to contribute a short note on some interesting experience. Just state the facts about some ingenious idea that you have actually worked out yourself or have seen.*)

### House plants outdoors

For the last two summers I have kept my pots of house plants in a place which has proved ideal — a shelf supported on strong brackets running the full length of the outer wall of the kitchen. It is so high from the ground that the foliage and flowers are on a level with my eye, and a quick glance along the line as I pass by enables me to detect promptly any disease or insect trouble. A cleat along the front edge prevents the pots from being knocked off, and the slope of the shelf is enough to make the water drain to the further end, where a small hole sends it through a near-by drain. This shelf is on the east side of the house, and the plants receive only a little of the morning sun on account of a grape vine which is trained on a trellis across the cement walk to the roof of the kitchen. Most of the plants enjoy this shade; those which require more sun are placed on the end of the shelf which is beyond the shadow of the vine. It certainly is convenient to have all the plants kept together in a position where they can be tended without stooping and where they do not dry out fast on account of the shade.— A. H. M., Pennsylvania.

### Flowers for shaded porch boxes

On the readers' service page of the February GARDEN MAGAZINE, E. W. S. asks about flowers for shaded porch boxes. My boxes do not get over an hour's sunlight a day. I use only single tuberous begonias, starting them in the house in February or March in flats, in a rather cool room. I have used these for years, and do not see any other porch boxes that I consider prettier than mine. I find that the cheaper priced begonias give me practically as good results as the higher priced ones.— T. A. B. J., Michigan.

### Beating the squash borer

One day last summer I found the leaves of the squash vines in my garden wilted and some of them turning yellow and dying. During a few days' absence the squash borer had gotten in his fine work. I knew that if let alone the vines were doomed, so resolved on heroic measures. From the puncture each borer had made in the stem I split the bark over their tunnels and removed every one I could find, then covered the cut stems as well as I could with soil. The vines brightened up at once and matured a fair crop of squashes. — F. B. H., Ohio.

### A morning glory decoration

If one wishes to have a genuine surprise for the family some morning at breakfast, make a centre piece for the table of morning glories. Select large, pointed and spirally twisted buds the evening before they are needed. Arrange them loosely in a vase or bowl, allowing some of the branches of the vine, with a few good buds, to trail over the table around the bowl. Give an abundance of room for the flowers to expand which they will do in the night. Put in a few upright twigs of shrubbery to which the vine is attached. The effect is very pretty.— A. F. C., Colorado.

### Picking lima beans

It is a good idea, when picking lima beans, to have two baskets. All dried or yellow pods should be pulled off and put into one basket, while those intended for immediate use are, of course, thrown into the other. The mature beans should be shelled, exposed to the sun for a day or two, and then put away in tin boxes (empty cracker tins are convenient) for use during the winter or for seed if so desired. Soak the dried beans several hours before cooking. The addition of a small piece of salt pork or bacon lends a pleasant flavor to the beans.— E. A. S. P., New York.

### A secret about asters

I find that aster plants grown in the open ground from seed sown the first of May give better satisfaction than those grown in flats or the greenhouse and that they are less liable to disease; in fact my loss from stem rot has been less than one per cent. since using plants grown in the open. My troubles from plants being killed by root lice I find has been overcome by dressing the bed before setting out the plants with wood ashes, working them in to a depth of about three inches. Being the owner of only a small city lot, I was much discouraged when others who had raised asters told me that they could not be successfully raised twice on the same ground; but rather than give them up, I decided to rotate my crops. Where I had a bed of asters three years ago, the next year I had a bed of cannas and the next year a bed of dahlias, both root crops, and last year I had as fine a bed of asters as any one could want in the same place as the original bed. Next year I shall rotate with gladiolus and the following year with some other bulbous plant, thus demonstrating that though a person may have only a small garden, at the same time they may have a bed of asters each year.— C. G. M., Indiana.

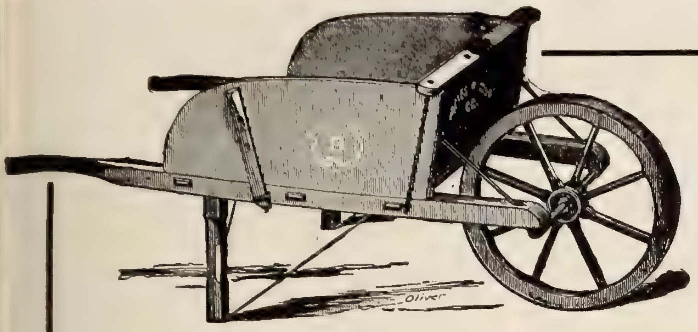
### Laths for shade

In Australia they grow strawberries under laths. Not only does this protect them from the intense heat of summer but it is claimed that the flavor is improved thereby; a fairly reasonable hypothesis in view of the fact that wild strawberries, which are somewhat shaded by the herbage as well as their own foliage, are more delicious than any cultivated ones. Orange cuttings and all kinds of seedlings also are grown in Australia under laths, which are placed the width of one of the strips apart. Here the idea might be worth while to prolong the strawberry season slightly. It already is known here as a good way of partially shading cuttings and, on a larger scale, of protecting palms and other tropical plants in summer.—H. N. T., Connecticut.

### The Pennsylvania anemone

Last May a nurseryman told me that he was relegating to the compost heap his entire stock of the Pennsylvanian anemone (*A. Pennsylvanica*). Why? For the simple reason that no one thereabouts would buy it; he could not even give it away. I confess that I felt sorry to see converted into an outcast a flower that, more than a thousand miles from home, I had grown fond of in the wild and had just introduced in my garden at an expenditure of fifteen cents. Now that I have known the plant intimately for a year, I am sorrier than before. Thanks to separation at the time of planting, my little clump has become a big clump with a perfect wealth of white bloom above the beautiful foliage. The effect is cool and refreshing on a warm June day and always, I think, I shall like to have some of it in the hardy border — or at any rate until I have a place of sufficient size to see at large the ideas as to naturalization that I have been accumulating. For that is the best way to use the Pennsylvanian anemone, whose name is as insufficient geographically as *Aquilegia Canadensis*. In the border it spreads with astonishing rapidity.— H. S. A., New York.

The Pennsylvania anemone naturalizes easily and shows its white flowers in June



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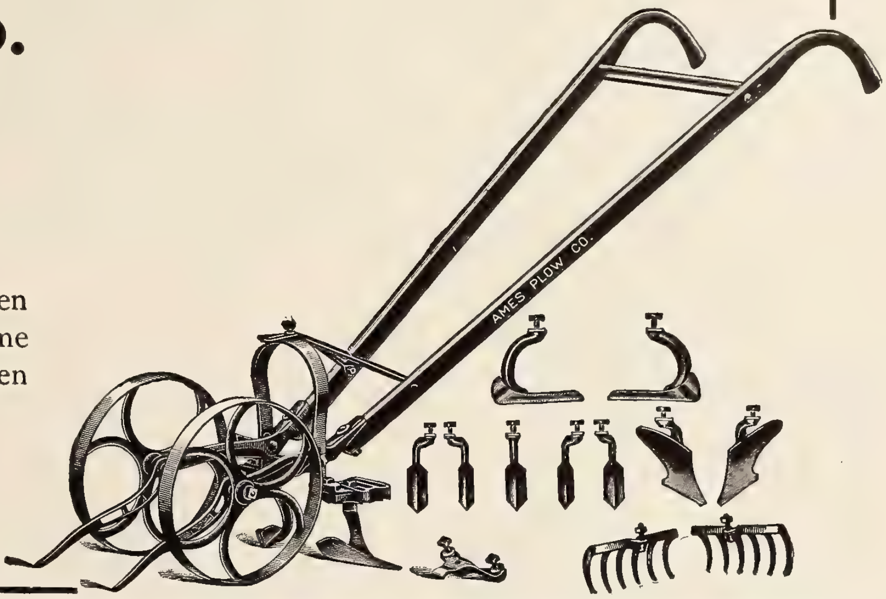
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# The FRUIT GARDEN

## Preventive Work for Early Summer

DURING June and July, when vegetation is growing rapidly, keep in mind the need of cultivation to aerate the soil and let the sunshine through to sweeten it and prevent acidity. Cultivation also mixes together the soil and fertilizer and pulverizes it so that it will hold more moisture.

With raspberries, blackberries, currants and gooseberries in rows from seven to ten feet apart (as they should have been planted), go through them with a horse and cultivator several times during the summer. The hand wheel cultivators are less serviceable for these and tree fruits. A cultivator having several small fine teeth is best, although any ordinary one-horse cultivator will do very well. If the soil is baked hard between the rows, go through them first with a light plow and plow the ground between the rows but not deep enough to disturb the roots. The one-horse cultivator widened out into a V-shaped harrow will do this very nicely. After a hard rain and before the soil bakes, go through the rows again with the cultivator. If you have some young trees, follow the same general plan, except that it may facilitate the work to use a small harrow instead of the cultivator if there are no crops or fillers planted between the trees.

With a few exceptions, it is of course best to do all the pruning of tree fruits when dormant, but cane fruits must be pruned and thinned in their growing season. The sucker varieties of raspberries (red and yellow) and blackberries, if left to grow in rich soil without thinning or pruning, will make a thick matted row of tall canes and will bear small berries. If you have hardy varieties of raspberries and blackberries, train them to tree form. Thin out the plants in the rows, leaving the strongest ones an average distance of one foot apart. When these canes are about four feet high, pinch off the tops to cause lateral branches. Canes grown in this way need some support; set posts along the row ten feet apart and nail arms horizontally on the posts about three feet from the ground; then fasten wires to the ends of the arms, on both sides of the row. In a cold climate where there is uncertainty about winter-killing, the best way is to thin the canes in the summer but not to shorten them, as long, unpruned canes are more easily laid down and covered.

Currants and gooseberries are better pruned when dormant. Strong-growing varieties of grapes, in rich soil, are apt to produce too much wood, and a little thinning in early summer will prevent the vine from setting more fruit than it can ripen. Do not pinch off too much of the new growth. Early in June tie the new growth of the vines to a trellis or to wires. If the renewal system is used, which is best for semi-hardy varieties in a cold climate, two to four of the strongest vines are trained fan-shaped on wires or over a trellis, and all the others are pinched off. This renewal fan system has been found excellent in localities where grapes would winter-kill if trained permanently to a trellis.

Early summer pruning of fruit trees is recommended when it is desired to induce bearing. Summer pruning is a shock to a tree and sometimes, though not always, it has the effect of making productive a non-bearing tree that is old enough to fruit. Be careful not to cut off too much wood.

There is no way to make sure of a good crop of European plums except to destroy the curculio. If you have chickens, place a coop of them under

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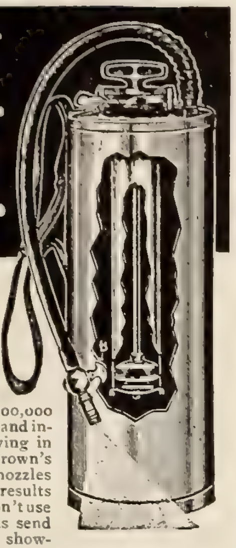

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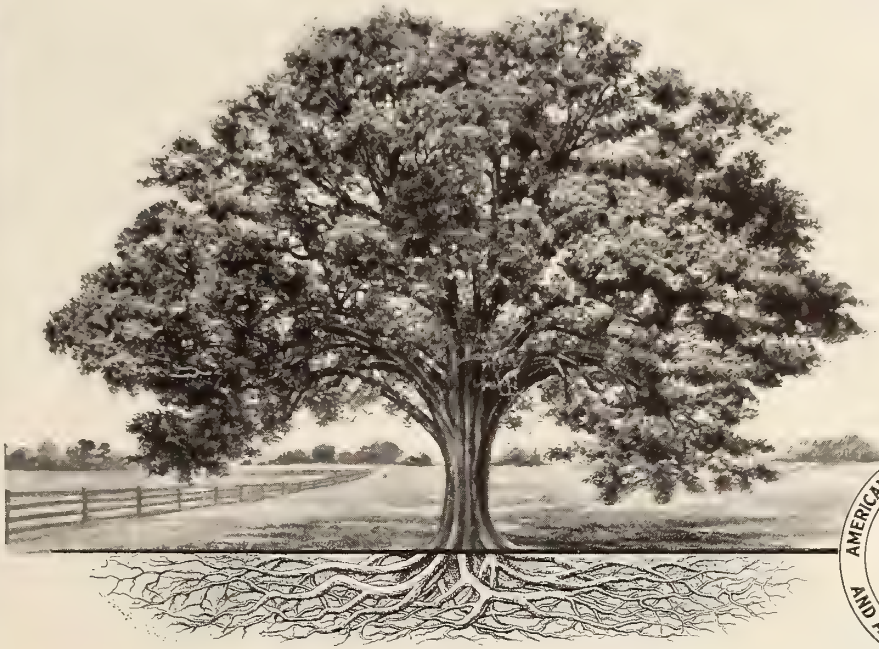

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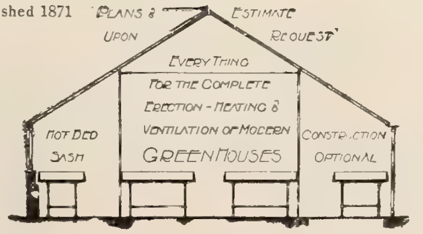
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the trees, jar the trees every day or two early in the season, and the chickens will pick up the insects. The next best thing is to spread a sheet under each tree, shaking the tree so that the curculio will fall off on to the sheet. Japan plums are less susceptible to curculio than the European varieties.

Black knot will destroy European plums in a few years if it is not controlled and will also badly injure cherry trees. Watch out for it and cut it out and burn it at its very first appearance. The treatment for pear blight, which is indicated by the twigs or branches dying, is the same as for black knot. Cut off the diseased wood down to the healthy wood, and always disinfect the saw or pruning shears after using with carbolic acid or corrosive sublimate.

The nests of the tent caterpillar in apple trees are quickly destroyed by just touching them with a burning rag, wet with kerosene and wrapped around the end of a pole. Do not injure the foliage by holding the torch too long in any one place.

A solution of one teaspoonful of paris green to ten quarts of water quickly kills currant worms; after you have destroyed them early in the season, keep watch of the foliage, for it may need a second application to entirely rid the bushes of them. They also feed upon gooseberries.

Last year this orchard was cultivated early, and seeded to clover the last week in July, which was plowed under later as fertilizer

If mildew affects your English gooseberries, combine paris green with lime-sulphur wash.

Continue this preventive work in the fruit garden and orchard all through early summer; in midsummer there will be need of spraying if the foliage shows signs of blight. Use bordeaux mixture or lime-sulphur wash; as late as July a combination of these fungicides with arsenate of lead will destroy the last brood of coddling moth. No one likes particularly to make these spraying solutions as they are to be used; for the fruit garden or small orchard it is better to buy ready prepared mixtures or else make stock solutions early in the spring, and dilute them as needed. One also needs a small force pump or knapsack sprayer, so that the sprays may be quickly and effectually applied.

For more detailed information as to the diseases and insects that may affect fruits, vegetables, etc., and their methods of control, see The Garden Magazine for May, 1912, page 247.

New York. W. H. Jenkins.

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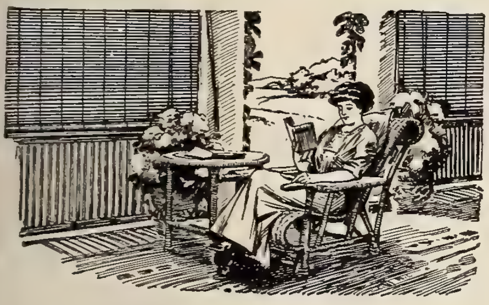

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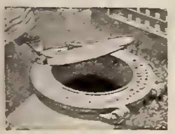

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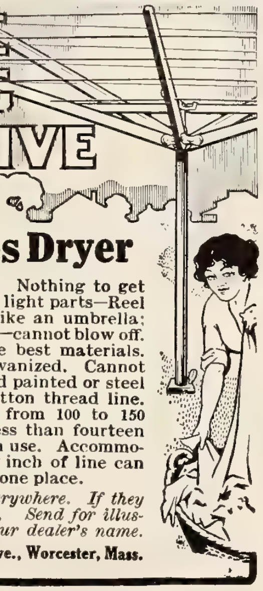

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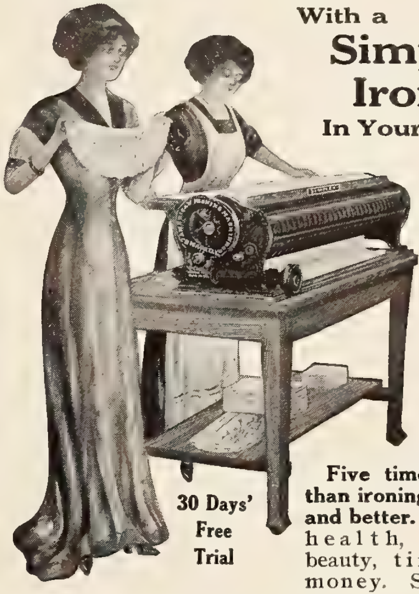

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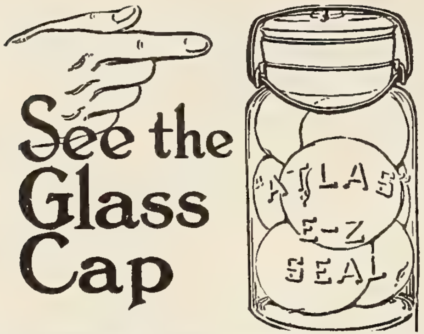

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## How a Strawberry Bed Was Made

MY STRAWBERRY patch is only about twenty-five feet square but my first harvest from it was 120 quarts of luscious berries. The bed contained about 200 plants. When I first made the bed I found the soil was not of the best for strawberry growing, but early in April it was spaded and thoroughly pulverized, well rotted stable manure being worked in. The spading was done by a laborer and cost $1.00.

I knew nothing about the different varieties of strawberries but a careful reading made me decide in favor of a staminate variety, which is one that carries its own pollen and does not, like the pistillates, require the transplanting of alternate rows of staminates to insure proper fertilization. I also decided in favor of Marshall, because of the large size of its berries and their deep crimson coloring. But use your own judgment in choosing the variety that seems best suited to your conditions; make inquiries among your neighbors and see which variety is succeeding the best with them.

I set the plants in hedge rows about a foot apart, the roots being carefully spread apart and covered with about an inch and a half of soil. Most of the runners were cut away to permit of easy cultivation. In the evening, after all the plants were set, they were thoroughly watered; in fact this was done for several evenings as long as the plants showed any inclination to droop.

About once a week the bed was cultivated with the 2-wheel cultivator and when it was necessary to hoe out the weeds, the cultivator teeth were removed from the machine and two sharp hoes were bolted into place. As the plants sent out runners at both sides of the rows, they were cut off and thrown away, but those that kept in the rows were allowed to remain and in a few weeks, instead of there being a lot of individual plants, there were several continuous rows of green and luxuriant leaves.

About the first of May the blossoms began to appear and were removed so as to keep the plants from bearing until the following year, when they would be stronger and able to produce a larger yield.

Once a month I sprinkled a little nitrate of soda about five inches away from the roots of the vines, along both sides of each row of vines, being careful that none of it came in contact with the vines. All this time the watering pot was freely used and the ground thoroughly cultivated.

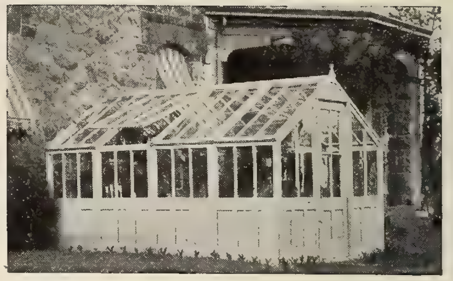
As soon as cold weather set in the plants were covered with a mulch of stable sweepings and loose straw was placed over that. This fertilized the plants and protected them from alternate thawings and freezings during winter, when the roots would be more or less torn by the heaving of the soil.

The following spring, I removed the mulch with pitchfork and rake, being careful not to tear the vines. In a short time the whole bed was abloom. As strawberries are composed largely of water, keep the watering pot busy.

From that little patch I harvested 120 quarts of luscious berries. A peculiarity of the Marshall is that the berries are nearly uniform in size. Some of them, of course, were enormous and several specimens measured five inches in circumference.

As soon as all the berries had disappeared the vines were cut with a sickle close to the ground, and when the leaves were dry we burned them where they were to destroy any fungi that might be present. With a hand hoe, I cut out all the remaining roots and shoots, leaving only a single row with the roots about a foot and a half apart, and giving to the plants the same treatment in cultivating, watering, stimulating with nitrate of soda, and cutting off shoots that I had given to the bed the first season. By fall I had almost as nice a lot of plants in rows as at the close of my first season; these were mulched through the winter and given the same manipulation the following spring as the original bed, and although it did not bear as bountiful a crop as a new bed would have, the berries were just as large and luscious. However, if you have the space, set out a new bed each season. A new bed can be planted with young plants taken from the rows of the old bed, where there is always an abundance of new plants.

New Jersey. S. T. LYON.



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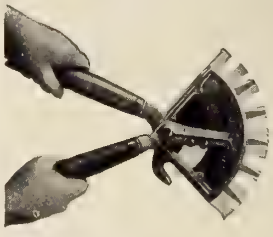

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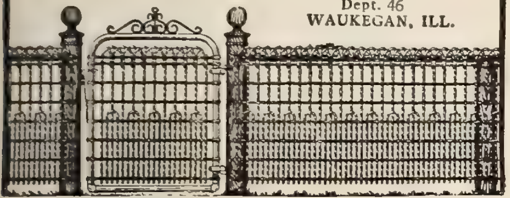

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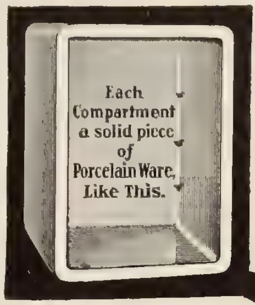
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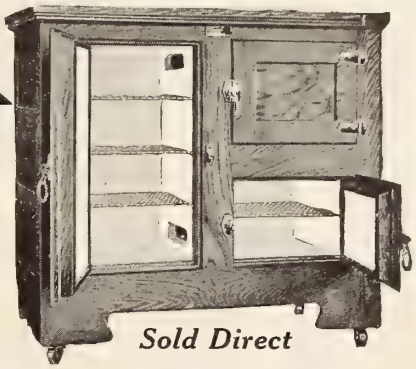

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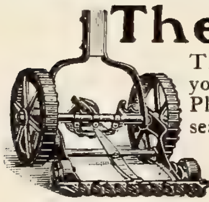

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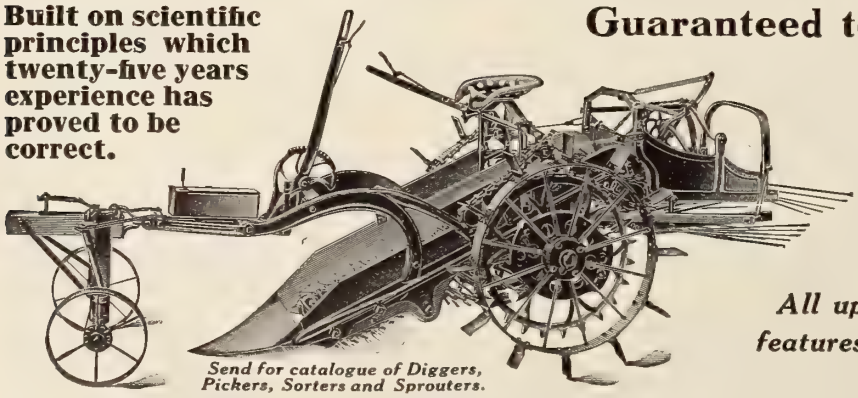

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## Starting a Muskmelon Crop

MUSKMELONS, although the most delicious of all fruit-bearing vegetables, are very frequently not to be found in the home-garden. This is largely due to the fact that they require special care in the way of planting and fertilizing.

The first step to take is to pick out the warmest and most sheltered spot in the garden. The hills can be planted close together, as near as four feet each way — though five feet is better. Melons love a light, warm, sandy soil, and if a spot with a gentle slope to the south or east can be found it will be the ideal place, for the one thing that melons insist on is good drainage. Water standing in the soil, even if below the surface, will prove fatal. If no ground is to be had save what is clayey in character, it may be remedied to a sufficient extent, at the time of preparing the hills, by digging them out quite deep and mixing sand, leaf-mold, spent manure or any similar "lightening" material with the soil before replacing it. The surface of the hills should also be slightly elevated but kept flat on top.

The manure you use for growing melons should be thoroughly rotted. Mix a good big forkful into the soil at the bottom of each hill, first digging out the hill to a depth of several inches. Cover this over with the earth removed and, to give the plants a quick start, mix into each hill before planting, a handful of cotton-seed meal, bone flour or tankage, or a combination of these.

For planting in the open, wait until all danger of frost is past — May 15th to June 15th, according to locality. Put not less than ten seeds in a hill; you will want only three or four plants, but some will not come up, and the striped beetle or other pests are pretty sure to get some of them. The seed costs only a few cents an ounce, sufficient to plant 40 or 50 hills.

One of the reasons why melons are not more commonly found in the home garden in the northern states, is that early frosts frequently spoil a big part of the crop. An extra early start, and, incidentally, a much surer one, may be had in one of two ways, both perfectly practical. The first is to start the seed in the house, greenhouse or frame. Melons and cucumbers do not readily stand transplanting, and must be moved without disturbing the roots. For this purpose, I prefer the common square, paper pots, but in lieu of these, however, old quart berry baskets, or sods cut into pieces four or five inches square and turned bottom side up, will do very well. Plant eight to ten seeds to a pot, or box, using dirt made light and rich by the addition of chip-dirt and old manure, and as soon as the plants begin to crowd, thin out to three. Harden off before setting out in the garden.

The second method is to use "melon-frames," which may be bought at a very reasonable price and will last for years. I have found it satisfactory to make my own, however. I use pine boards about one third of an inch thick and eight inches wide. These are made up into boxes just large enough to be covered by 16 x 24 or 16 x 20 double-thick glass, and held in place on three sides by small nails driven part way in and bent over. This makes it possible to slide the glass out part way on hot days, or when it rains. A still simpler method is to cover the wooden frames with cheesecloth, but this is not as satisfactory and will not forward them as quickly.

The most dangerous enemy of the muskmelon is the small striped cucumber beetle. I have tried practically every advertised and home "remedy" for these persistent little pests. Mechanical protection, given by tacking mosquito netting or wire over the frames, or on similar bottomless boxes is after all the only sure way. In this way the intruders can be kept off entirely until the vines begin to run, and after that, if one takes proper care in giving frequent cultivation, and keeps the vines in good form by pinching out the running ends when a length of eighteen inches or so has been attained, the result should be a good crop of melons.

For later attacks of the striped beetle — that is, after the vines get so large that the frames must be removed — I have found arsenate of lead and tobacco dust the most effective things to use.

Connecticut. F. F. ROCKWELL.

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# Country Life in America

## For June 15th

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## A Bed of Foliage Plants

At last I have achieved the desired effects with salvias, cannas and the castor oil plant in a bed in the lawn. It seemed as if I couldn't get the right heights; I would get the varieties either too large or too small. The heights of three, five and eight feet make a very effective foliage bed or centrepiece in a lawn.

The distance apart the plants are put in their permanent place has considerable to do with density. I find it best to give them lots of room. My bed was an oval about sixteen feet in long diameter and I used only three ricinus plants for the centre. Cannas were put about two feet apart in the row, three and a half feet from the ricinus and three feet from the salvias. The salvias were set eighteen inches apart in rows and the same distance from the sod.

I found it a good idea to stake the ricinus for they grew very rapidly. I have also tried to plant them an inch below the first leaves to insure erect growth, but the stakes are better and soon are hidden by the density of the foliage.

Sprinkle nitrate of soda around on the soil at intervals during the summer before or shortly after showers. A half pound is enough for a season. Keep it away from the foliage.

Salvias are started about the middle of March in flats and are more successfully grown in a temperature of 70 degrees. Then pot up in 3-inch pots with a good mixture of leaf mold and sandy loam. The splendens variety of salvia does not have as large spikes of flowers as the dwarf varieties; they are shorter and more compact than either Bonfire or Burning Bush.

My cannas are about two-inch long pieces, cut from stools that have been kept over the winter in a dry cellar. The end piece of every stool will start to take growth more rapidly than other sections of the same stool. A sandy loam and 4-inch pots, placed under glass about April 1st, make nice plants to be set out the first week in June. Cannas, if started early, are most generally true to height. I find that the splendens variety of canna is best for a 3-foot height. I also used Harry Laing variety which grows about five feet in height, and has flowers of orange and scarlet.

The red-stalked castor oil bean (*Ricinus sanguineus*) which grows about eight to nine feet high, has very thick blood red stalks. The leaves do not crack or rip with the first heavy rain storm as does *R. Philippinensis* which also does not spread as symmetrically nor as uniformly at the top. I start my castor oil beans under glass about April 1st in 3-inch pots of very porous soil, as the beans have a tendency to rot if not given sufficient drainage. They generally lose their first two leaves, but new ones come on very rapidly.

New York. Moe Spiegel.

## Home Grown Rose Plants

Two years ago, I planted some rose slips taken from a friend's garden. She gave them to me reluctantly, as they were covered with black spots, and warned me that it might be dangerous for my own roses. So in planting them I cut off all the infected leaves and burned them in the house; then tucked the tiny slips under the preserve jars and left them.

Last summer, being a year and a half old, they were fine large plants and apparently very healthy.

On my return from a visit what was my distress to find the new plants covered with black spots, and not only they, but some of my old bushes in their vicinity — Madame Plantier, Coquette des Alpes and two other white roses, which had been given me, and whose names I do not know. The young plants were all Margaret Dickson. It seems apparently to be the white roses which are most easily affected. I have been wondering whether the slips inherited this disease from the parent plant, or whether it was due to the wet weather that we had last summer.

New York. S. T. Homans.

[The conditions were favorable — and as the disease is not uncommon, even growing on some native wild roses, one can hardly be surprised at its appearance. Spray with ammonical copper carbonate, and burn all affected leaves, etc. — Eds.]

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4. Made of Creosote, which thoroughly preserves the wood.
5. Guaranteed fast colors,
6. Suitable and appropriate for the smallest bungalow or the finest residence.

*You can get Cabot's Stains all over the Country. Send for samples of stained wood and name of nearest agent,*

**SAMUEL CABOT, Inc., MFG. CHEMISTS**
**1 Oliver Street, Boston, Mass.**

**LEMON OIL CO'S STANDARD**
SOLUBLE IN WATER
NO ODOR **INSECTICIDE** NO POISON

**Guaranteed under the Insecticide Act., 1910. Serial No. 321.**

If you want an insecticide to destroy insects on plants, Mealy Bug, Brown and White Scale, Thrip, Red Spider, Black and Green Fly, Mites, Ants, etc., **we have it.** Our insecticide destroys these pests, at the same time leaves no disagreeable odor.

**Poisonless** — is harmless to user and plant. Recommended and used by leading seedsmen and florists throughout the country.

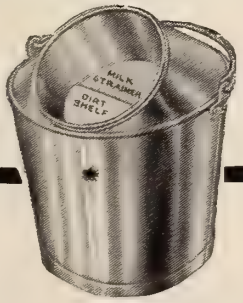
A favorite in chicken houses, and for killing insects in the homes. An excellent wash for dogs and other animals. It relieves mange.

**½ Pint - - 25c; Pint, - - 40c; Quart, - - - 75c;**
**½ Gallon, $1.25; Gallon, $2.00; 5 Gallon Can, $9.00;**
**10 Gallon Can, $17.50**

*Dilute with water 30 to 50 parts*

Manufactured by

**Lemon Oil Company**
**Dept. L. 420 W. Lexington St., Baltimore, Md.**
*Directions on every package*



**DIRT out of the MILK**

**You can't "strain" it out—keep it out.**

One milk pail and only one will do it. Milk goes through the strainer cloth into the pail, untainted, while the dirt shelf catches all the dirt from the udders and handling in the

**Sterilac Milk Pail**

**(Try it 10 Days Free).**

You will never give it up if you try it. The only sanitary milk pail that has the approval of all dairymen. Heavy, well made, the proper height, just the right "set," easy to pour milk out of, easy to clean, and above all, it keeps milk pure. Best way to keep milk from souring, surest way to keep out of trouble with Boards of Health and Milk Commissions, and get a reputation for pure milk. Price $2.50. Ask your dealer. We will send direct express prepaid, if no dealer in your section.

**STERILAC COMPANY, 2 Merchants Row, Boston, Mass.**

Doubleday, Page & Company

**MOTHS OF THE LIMBERLOST**

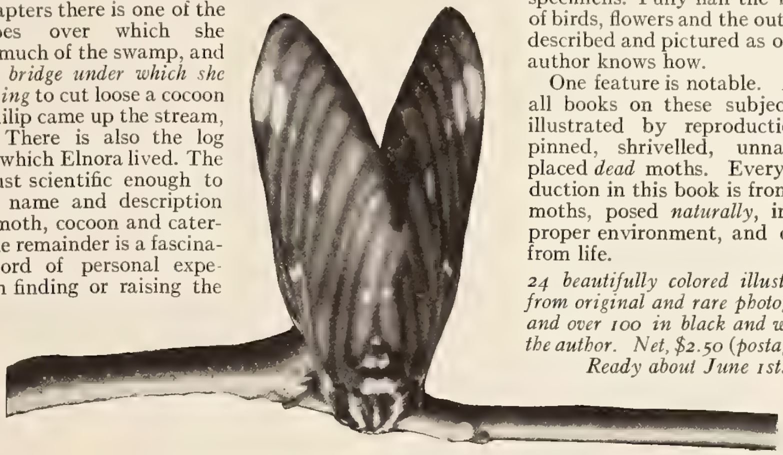
**By Gene Stratton-Porter**

THERE is no portion of the country which has been made more familiar to hundreds of thousands of readers than the Limberlost Swamp, that woodland and marsh which has been the setting of Mrs. Porter's wonderful novels, "Freckles," "A Girl of the Limberlost," and "The Harvester."

It is about this very bit of Indiana that Mrs. Porter has written her new book, "Moths of the Limberlost," and it is the most unusual and interesting nature book ever imagined. It is a story of the "Moths" of the Limberlost which every reader of "A Girl of the Limberlost" will remember. Mrs. Porter pictures and describes the moths hunted by Elnora, and in these chapters there is one of the landscapes over which she hunted, much of the swamp, and *the very bridge under which she was working* to cut loose a cocoon when Philip came up the stream, fishing. There is also the log cabin in which Elnora lived. The text is just scientific enough to give the name and description of each moth, cocoon and caterpillar; the remainder is a fascinating record of personal experiences in finding or raising the specimens. Fully half the book is of birds, flowers and the out-doors, described and pictured as only the author knows how.

One feature is notable. Almost all books on these subjects are illustrated by reproductions of pinned, shrivelled, unnaturally placed *dead* moths. Every reproduction in this book is from *living* moths, posed *naturally*, in their proper environment, and colored from life.

*24 beautifully colored illustrations from original and rare photographs, and over 100 in black and white by the author. Net, $2.50 (postage 25c.)*
*Ready about June 1st.*



**BY THE SAME AUTHOR**

**The Harvester**

**Now in its 6th Large Printing**
**Over 200,000 Copies in Seven Months**

In a remarkable review a page and a half long in **The Independent,** Corra Harris, Author of "The Circuit Rider's Wife" and "The Recording Angel," thus defines the extraordinary charm of Mrs. Porter's book:

"There is not a financier in Wall Street, not an artisan, nor grocerman, nor clerk in any city who reads this story who will not discover in himself some dim relationship, buried beneath the dry and dead leaves of commercialism, to this medicine man, who lived with his dog in a cabin in the green shade upon the banks of its singing water. A vacation likeness to be sure, for few men of to-day are sufficiently hardy in mind or body to endure such an existence longer than three weeks. But that is the fault of our kind of civilization, not of the life portrayed in "The Harvester."

*Illustrated in colors. Fixed price, $1.35 (postage 14c.)*

**"Freckles" and "A Girl of the Limberlost," the other members of this delightful trio, are selling better to-day than when they were published six and three years ago, respectively.**

**LATE PLANTING**

If you wish to plant hardy perennials after the Southern Nurseries have finished shipping, send to Vermont and get plants and bulbs. We send out plants until June first.

Ask for Horsford's Catalogue

**Frederick H. Horsford, Charlotte, Vermont**

**KALAKA** *Fertilized grass seed* **Grows a Fine LAWN**

It is specially selected, specially tested grass seed, and pulverized manure — the ideal combination to grow quick hardy, lasting turf. For seeding new lawns or putting new life into the old one nothing equals **KALAKA.** Packed in 5 lb. boxes, express prepaid, at $1.00 per box, east, or $1.25 west of Omaha. Write for prices on special mixtures for special locations and purposes. Order today and have the best seed that money can buy. Get our *free* lawn book.

**THE KALAKA COMPANY. 15 Union Stock Yds. CHICAGO**

FRUIT TREES

AND SMALL FRUITS

| | | |
|---|---|---|
| APPLES, | 2 yr. old at | $15.00 per 100 |
| PEACHES, | 1 yr. old at | $8.00 per 100 |
| CHERRIES, | 2 yr. old at | $7.00 per 100 |

Plums, Pears, Quinces, and a general line of Fruit and Ornamental Trees, all Government Inspected stock. Send to-day for our Free Catalogue, and buy at wholesale prices direct from the Growers.

**ONTARIO NURSERY CO., Inc.**
**Box 21, GENEVA, N. Y.**

The Finest of Juicy Sweet Corn can be grown in our Greenhouses all the Year

ALONG in dreary February when your thoughts were turning toward summer joys, haven't you often wished you could right then and there set your teeth in a juicy ear of corn such as comes from your garden?

Haven't you longed for some thin-skinned, meaty tomatoes, picked ripe from the vines and not the usual tasteless, disappointing out-of-season kinds?

Haven't there been times when you felt that pretty much everything tasted all alike, and you wanted something, you didn't know just what?

It's plain to be seen then that you need a greenhouse — one of our Glass Enclosed Gardens, where you can have the choicest of appetizing vegetables the entire year about. Yes, and strawberries.

And of course flowers — everybody wants flowers.

How would a house like this one above suit you?

Sold at least a dozen like it last year.

Send for our catalog and early make your selection. Then we can get the building promptly under way so your indoors garden will start where the outside one ends, which is decidedly the way you want it. You will be interested to know we have been building greenhouses for over half a century. Longer than anyone in the business — in fact.

**Lord & Burnham Co.**

SALES OFFICES
NEW YORK St. James Bldg.
BOSTON Tremont Bldg.
PHILADELPHIA Franklin Bank Bldg.
CHICAGO Rookery Bldg.

FACTORIES
IRVINGTON, N. Y.
DES PLAINES, ILL.

**Plant for Immediate Effect**
*Not for Future Generations*

**Start with the largest stock** that can be secured! It takes **over twenty years** to grow such Trees and Shrubs as we offer.

**We do the long waiting**—thus enabling you to secure Trees and Shrubs that give an immediate effect. **Send for Spring price list.**

ANDORRA NURSERIES Box G CHESTNUT HILL, PHILADELPHIA, PA.
WM. WARNER HARPER, Proprietor

The
Young People's
Club

## To Encourage Gardening

DEAR Gardening Folk:

I was so pleased when the postman began leaving letters on my desk from boys and girls who read my letter about our Garden Club last month. I knew there were a great many young folks who wanted to have a garden this summer and that mothers and teachers were all eager to help them, but I did not realize how many boys and girls wanted to *earn money* to buy seed, plants and tools until all your nice letters came to tell me.

Our "Young People's Garden Club" is fully organized now with boys and girls from many states as members, and in dozens of towns you will find groups of young gardeners busily intent upon having better gardens than they have ever grown before. Some of our boys and girls have formed neighborhood clubs under the direction of their mothers or a favorite teacher and are happily at work on spare ground near their homes, while boys and girls who are members of school gardens are joining our Club so as to earn a full purse with which to help improve the school gardens.

If you have only a small plot or even a window box, it will be lots of pleasure to plant and care for your favorite flowers; while if you have a nice plot, you can do wonders.

Just think, too, you can *earn money* to buy all the seeds, plants and implements for the garden yourself. And it is mighty nice to be able to earn money.

Six of our girl members in Springfield, Mass., have commenced a neighborhood club, and are working out a lovely idea. They have agreed to make their back yards beautiful this summer, and each girl is working hard to see who can earn the most money with which to buy plants.

I should like to have all my boys and girls write me about their garden plans this summer.

Here is a letter from a young gardener out in Ohio:

"DEAR LADY GREENSLEEVES:

"My mother and I read your letter about the Young People's Garden Club. You said you wanted to help boys and girls to have gardens. Well, I want to have one this year, but I have no ground (our house takes it all up). I can rent for very little the lot back of our house and four of my chums will help me plant and take care of it if we only could get enough money to do it. Miss Landis, our teacher, says she'll help us plant it. Will you tell us how to get enough money to do it? We want to become members of your Club and will thank you if you will tell us how to do so.

Yours truly, ROBERT MOORE."

You may be sure that I wrote to Robert at once and told him how to earn the money he and his chums needed for their garden.

You are invited to join our Club, too. Boys and girls, teachers and mothers, who love "green things growing" and who want to know all the wonderful secrets of Mother Nature are invited to write me this very hour and let me tell them all about our Club. I do not want a single boy or girl left out of our Club and shall hope to have your letter asking for membership right away.

Yours for a lovely garden,
LADY GREENSLEEVES,
YOUNG PEOPLE'S GARDEN CLUB,
GARDEN MAGAZINE, Garden City, N. Y.

# DUTCH BULBS

DIRECT
FROM THE GROWERS

Rarest *Darwin* and *Cottage Tulips* must be ordered *before July* 25. Quality, Variety and Price unequalled. Catalogue ready.

**FRANKEN BROTHERS**
Deerfield, Illinois
Nurseries also at Sassenheim, Holland

Green Flies and Black Flies Too are easy to kill with

**"TIP-TOP"**
BRAND
**TOBACCO POWDER**

For Fumigating or Dusting **$3.00 per bag of 100 lbs.**
Write for free samples. MONEY WITH ORDER
**INTERSTATE TOBACCO CO., Inc.** **713 First Avenue, New York.**

**APPLE GROWING** The healthier the tree, the better the fruit. The longer trees are sprayed with "SCALECIDE" the more beautiful, healthful and fruitful they become. "SCALECIDE" is the acknowledged leader of all soluble oils — the only one containing distinct fungicidal properties. "SCALECIDE" will positively kill all soft-bodied sucking insects without injury to the tree. Let us prove these statements. Send today for free booklet "SCALECIDE — the Tree Saver." Address B. G. PRATT CO., Mfg. Chemists, 50 Church St., N. Y. City.

**Peonies** We have one of the finest stocks anywhere in the country and should be very glad to figure with you on your list of wants.

PETERSON NURSERY
**Stock Exchange Building,** **CHICAGO**
Mention The Garden Magazine when you write.

**SONG POEMS WANTED**

**YOU MAY BE ABLE TO WRITE A HIT**

Hundreds of dollars have been made in successful songs. Send us your WORDS or MELODIES. Acceptance guaranteed if available. Washington only place to secure a copyright. H. Kirkus Dugdale Co., Desk 740, Washington, D. C.

**Have you Gardening Questions?** Experts will answer them free. If a plant fails, tell us about it and ask help from Readers' Service.

## The English Lawns

are famous for their wonderful perfection and durability. Such lawns may be produced here if

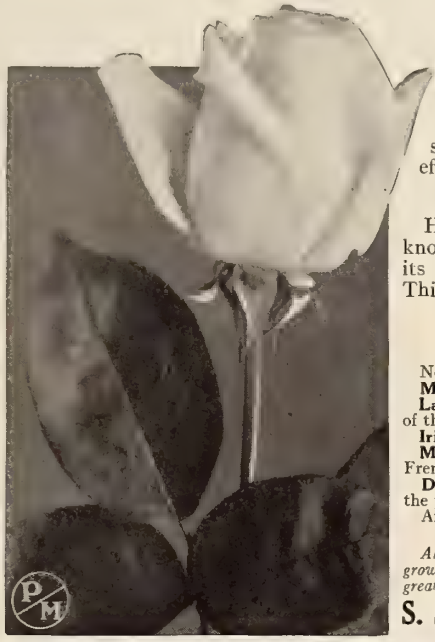
**IMPORTED ENGLISH LAWN GRASS SEED**

is used. The result of centuries of selection. No weed seeds or coarse grasses. Thoroughly hardy. Beautiful in color and texture. Send for directions — How to Seed and Keep a Beautiful Lawn. Free.

Barwell's Agricultural Works
Madison and Sand Sts., Waukegan, Ill.
Established at Leicester, England, in 1800

# SUNBURST—Most Glorious Rose

**Your Garden will not be complete without it.**



A deep coppery Indian yellow. Absolutely different in color from any other yellow rose offered. Perfectly hardy. A vigorous grower. Extremely double. Reflects the marvelous beauties of the summer sunrise.

**Killarney Queen**

A brilliant pink rose. Large flower. Ever blooming. A stronger grower than the regular Killarney. By far the most effective hybrid tea for outdoor growing.

**Improved Double White Killarney**

Has twice the petalage of the original white Killarney. You know what a magnificent all-round garden rose Killarney is, with its vigorous growth and splendid blooms the season through. This is the finest Killarney of them all.

***These new rose aristocrats postpaid 75c. each, 3 for $1.50***

No rose garden can be complete without these five blue-bloods of the rose family!

**Mrs. Aaron Ward**—Indian yellow, very free, a wonder in its class.

**Lady Hillingdon**—Clear yellow deepening towards the center. The sensation of the metropolitan markets the past few months.

**Irish Melody**—The new Dickson yellow, Killarney blood. A splendid variety.

**Mrs. Taft**—(Prince de Bulgarie, Antoin Rivoir). A beautiful shell pink French rose, and one of the loveliest new ones in cultivation.

**Double Pink Killarney**—The sensational new Irish rose of 1911. Double the petalage of the original pink Killarney.

Any of the above five by mail postpaid for

**50c. Each, Three for $1.00, Five for $1.50**

*All our roses are fine, healthy, young plants on their own roots, which will positively grow and bloom everywhere. Order at once, enclosing your check, for there is already a great demand for these new varieties.*

**S. S. PENNOCK-MEEHAN CO.** **1614 Ludlow Street Philadelphia**

**WE GROW PEONIES — NOTHING ELSE**
Mohican Peony Gardens, Box 300, Sinking Springs, Pa.

***"Of all sad words of tongue or pen"***
***The most frequent are these, "forgotten again."***

When the right time comes you may forget to plant any of those beautiful *PEONIES* and *IRIS* which now make the lawns and parks so bright. Drop me a card now; I'll help you to remember. Fred W. Card, Sylvania, Pa.

**MICHELL'S** 196-page CATALOG of distinctive seeds and plants, FREE
520 MARKET STREET PHILADELPHIA

**C. G. van Tubergen, Jr.**
**Haarlem, Holland**
*Grower of choice Bulbs*
**E. J. KRUG, Sole Agent**
**116 Broad St., New York**
Formerly represented by C. C. Abel & Co.

Bulbs imported direct from Holland for customers. No supply kept here.

DUTCH BULBS and ROOTS
Direct from Holland. Catalog full of vital facts FREE.
Write to-day to
Gt. van Waveren & Kruijff
American Branch House 140 N. 13th St., Philadelphia
*See detail advertisement on page 285*

***Three Great Tales by***

# Joseph Conrad

FOR several years Joseph Conrad has been writing great sea tales and many thousands of readers have found in his stirring romances a kind of work that is a real delight. Not being an American he did not find his audience here as quickly as he otherwise might have done, but he is now coming into his own. Conrad was a sea captain for years and "Lord Jim" has been called the "finest man's-novel ever written."

## LORD JIM

A story of a young seaman who has always dreamed of the day when he shall be called upon to face some great emergency. What happens when an opportunity offers itself is portrayed in a most unusual and striking fashion. **$1.50.**

## THE POINT OF HONOR

"It is swifter in movement than 'Nostromo.' He is a stylist of distinction." — *New York Evening Post.*

***Illustrated in color.* $1.25.**

## YOUTH

Three stories: Youth, Heart of Darkness, The End of the Tether. "'Youth' is a splendid triptych — vivid, true, artistic." — *Literary Digest.* **$1.50.**

***AT ALL BOOK-SHOPS***

"Ten thousand saw I at a glance
Tossing their heads in sprightly dance."

**Save Money on Your Fall Bulbs by Ordering Now**

All orders for Fall Bulbs placed with us before July 30th, we will book at **import prices.**

You will surely want some of the Narcissus, so charming in the illustration.

It's quite the most popular and beautiful variety for naturalizing in the woodlands and borders of the wild garden. They are very hardy, and multiply rapidly.

Special advance order import prices for flowering bulbs of the Narcissus are as follows:

| | | | |
|---|---|---|---|
| **100 for** | **75c.** | **250 for** | **$1.75** |
| **500 for** | **$3.00** | **1,000 for** | **$5.75** |
| **5,000 for** | **$27.50** | **10,000 for** | **$50.00** |

Other fall bulb prices in proportion. Write us your list of wants and we will give you complete import prices.

Be sure your name is on our list for the fall *Garden Guide.*
It will be mailed to you free, the middle of August.

*Boddington's Bulbs Bloom.*

**ARTHUR T. BODDINGTON**
**340 West 14th Street New York**

**Victor** $10 to $100
HIS MASTER'S VOICE

**DUTCH BULBS and ROOTS**
Direct from Holland. Catalog full of vital facts FREE.
Write to-day to
Gt. van Waveren & Kruijff
American Branch House 140 N. 13th St., Philadelphia
*See detail advertisement on page 285*

Artistic Gardens Gardens designed and drawn to scale. Planting of trees, shrubs and flowers arranged by correspondence. Inspection of work cordially invited. A catalog of plants grown by Mrs. Elsie McFate of Pittsburgh, at her Hardy Plant Nursery will be sent upon request.

*Address all communications to*
**HILLSIDE HARDY FLOWER GARDENS** Turtle Creek, Pa.

# SOUTHERN DEPARTMENT

## Do These Things Now!

JUNE is probably the best time for sowing collard seed, the most popular winter vegetable of the South. Plant the improved, white-heading sorts, easy to grow and very tender. The seed may cost a few cents more than the ordinary kinds, but it will be money well spent.

Sow rutabaga seed this month, too, in rich, moist soil. Plant in the onion field after the onions are harvested.

Sow cow peas for hay in the corn rows at the second plowing, or in the Middle South at the last plowing. Even if no peas are gathered, the vines and roots enrich the soil with nitrogen and humus.

Sow seed of nasturtium, marigold, aster and *Phlox Drummondi* for fall flowers. Pansies may also be sown, but there will be no certainty of their flowering this year. However, the plants will certainly blossom in the winter or very early spring. The flowers should then be extra large, too, on account of the size, age and strength of the plants. Remember that it requires plenty of sunshine in the winter to bring forth blossoms.

Cut small grain just as soon as it is ripe, and immediately after one crop is off the ground, plant another, such as cow peas and sorghum cane for hay, white potatoes for a fall and winter crop, or corn. Spanish peanuts are also suitable for planting after small grains, but the finest crop of sweet potatoes that I have ever grown was planted after oats. The plants were set out June 3rd. I used an 8-3-4 fertilizer at the rate of 1500 pounds to the acre, and the patch yielded at the rate of 250 bushels of potatoes an acre. The soil was fairly good and the plants were cultivated three times during the season; they were harvested during a very dry spell the latter part of October before frost. Always let the potatoes get thoroughly dry before storing. One advantage of planting potatoes after oats is that the oat stubble furnishes humus, which potato plants must have to succeed well. In planting sweet potatoes after the first week of June, it is best to use pieces of the vine instead of plants, although it won't pay very well to cut the vines very close. Keep a close watch for insects and destroy all you find.

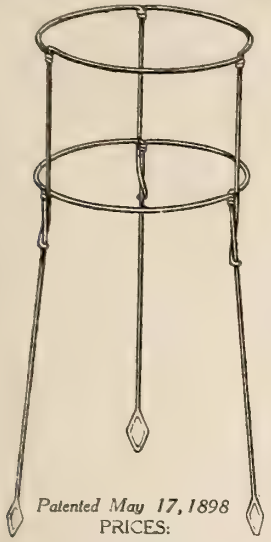
Look out for your house plants, especially if they

These sweet potatoes, planted after oats, yielded a crop of 250 bushels to the acre

## The Model Plant Support

**For Tomatoes, Peonies, Dahlias, Golden Glow, Chrysanthemums, etc.**

*REPAYS THE COST MANY TIMES OVER IN A SINGLE SEASON*



*MADE STRONG AND LIGHT OF HEAVY GALVANIZED WIRE*

*Patented May 17, 1898*

PRICES:

Per dozen, $1.75; per 50, $7.50; per 100, $12.50

A Lighter Support is also made for Carnations

50 Complete Supports $2.25; 100 Complete Supports, $3.50

**Flower Bed Guards, Trellis, Lawn Guards.**

**For Sale by all Prominent Seed Stores and Supply houses**

**Send for Price List and Catalogue of our Full Line of Flower Supports**

**IGOE BROTHERS** 67-71 Metropolitan Avenue, Brooklyn, N. Y.

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## Biltmore Nursery

Ornamental Shrubs, Hardy Plants, Deciduous and Evergreen Trees. Interesting, helpful, informing catalogs sent upon request.

**BOX 1262 BILTMORE, N. C.**

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## Bees on the Farm

"Gleanings in Bee Culture" will help you get more pleasure and more profit from Bee keeping. 6 months' trial subscription 25c. Book on Bees and Catalog of Supplies sent free.

**THE A. I. ROOT COMPANY, Box 262, Medina, Ohio**

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**Evaporation From Fields Is Decreased 50 percent**

by protecting *evergreen windbreaks*. In a house so sheltered you can live cooler all summer. Get Hill's 1912 Planter's Guide if interested. Free if you write today.

**THE D. HILL NURSERY COMPANY, Inc.**

**Douglas Avenue Dundee, Illinois**

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## SPRAY

**CALENDAR and DIRECTIONS FREE**

We make Bucket, Barrel, Knapsack, 4-Row Potato Sprayers, Power Orchard Rigs—Sprayers of all kinds for all purposes. Automatic liquid agitators and strainer cleaners—the up-to-date sprayer line. Ask for free spraying book.

**Field Force Pump Co., 48 11th St., Elmira, N. Y.**

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## *Climbing American Beauty Roses*

Twenty times as many blooms as the old American Beauty — each measuring 3 to 4 inches in diameter. Fragrance and beauty unsurpassed. Can be trained to trellis or grown as a pillar rose. Hardy as an oak. Send for particulars.

**HOOPES BRO. & THOMAS CO., West Chester, Penna.**

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## BURPEE'S SEEDS GROW

If you want a copy of the **"Leading American Seed Catalog,"** for 1912, address **BURPEE, Philadelphia.**

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**DUTCH BULBS and ROOTS**

Direct from Holland. Catalog full of vital facts FREE.

Write to-day to

Gt. van Waveren & Kruijff

American Branch House 140 N. 13th St., Philadelphia

*See detail advertisement on page 285*

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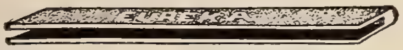
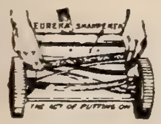
## Sharpen Your Lawn Mower

**20 times for 35c.**



### Eureka Sharpener


EUREKA SHARPENER
THE ACT OF PUTTING ON

A new device to attach to the stationary bar of any mower.

Sharpens all blades to a keen, even, accurate edge in a few minutes. Anyone can attach it to stationary bar. (See illustration.) No filing, no work. Simply push the mower on sidewalk with Eureka Sharpener attached and blades sharpen automatically. Sold by all dealers, 35c., or sent prepaid on receipt of 40c., stamps or coin. Specify width of mower—12 in., 14 in., 16 in., 18 in. or 20 in. Satisfaction guaranteed.

**EUREKA SHARPENER CO., 1382 24th St., Detroit, Mich.**

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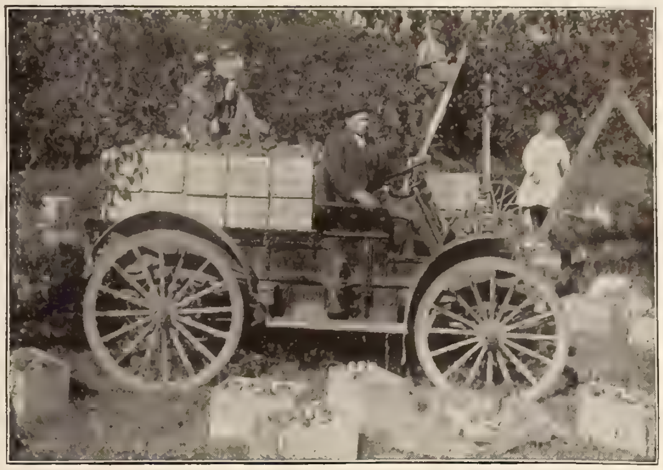
# Light Hauling at Little Expense



Country life implies many trips of greater or less length from the home to the various sources of supply — store, mill or depot, either to fetch or carry loads too heavy for carriage horses, too cumbersome for a touring car, and for which the work horses even when they can be spared from the field are too slow. A light speedy auto wagon, capable of carrying 1,000 pounds or more, at 10 to 15 miles an hour, is the vehicle for such work. We offer just such a handy wagon in the

## International Auto Wagon

It is built by practical men to meet such conditions as the above. It will travel country roads at all seasons of the year; it is simple and easy to manage, powerful, and dependable. It runs on solid tires, doing away with the trouble and expense incident to pneumatics. It is built throughout for light, speedy hauling at little expense.

Country home owners, farmers, and city business men find it the handiest light-hauling and quick-delivery wagon made. Detailed statements of work capacity and comparative cost together with catalogue of the car, will be mailed on request.

*Address a post card to*

**INTERNATIONAL HARVESTER COMPANY OF AMERICA**

**71 Harvester Building** *(Incorporated)* **Chicago U S A**

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## GILLETT'S

**HARDY FERNS AND FLOWERS**

**For Dark, Shady Places**

Send for my descriptive catalogue of over 50 pages, which tells about this class of plants **It's Free.**

For any order of $5 or over, we will send, free one-half dozen bulbs of White Trillium. Send order to-day.

**Edward Gillett, Box C, Southwick, Mass.**

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## Make the Farm Pay

Complete Home Study Courses in **Agriculture, Horticulture, Floriculture, Landscape Gardening, Forestry, Poultry Culture, and Veterinary Science** under Prof. Brooks of the Mass. Agricultural College, Prof. Craig of Cornell University and other eminent teachers. Over one hundred Home Study Courses under able professors in leading colleges.

**250 page catalog free. Write to-day.**

**THE HOME CORRESPONDENCE SCHOOL**

**Dept. G. A., Springfield, Mass.**

Prof. Brooks

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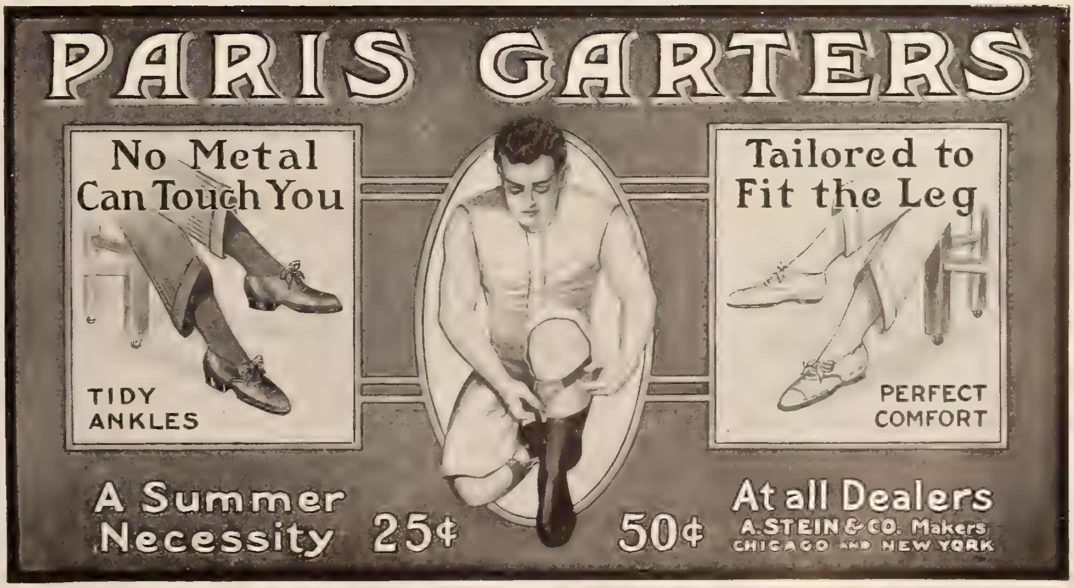


An Excellent Example of (developed) Fore-planning in Perennial Planting

**Palisade Popular Perennials**

*For Late Comers*

IT IS not too late to plant perennials. A good thing to know if you have just moved in and the grounds look bare.

All you need to do is to plant now. Annuals will grow up from seed and bloom abundantly before frost. Pot grown plants instead of seeds can be set out today, and tomorrow they will be as much in place as if they had been a fixture for years.

Buy some potted perennials and vines. You will thank yourself a month from now for the foresight that prompts you to buy today.

For years we have made a specialty of filling orders for late comers. We are fully equipped to fill your order. Write for our catalogue and suggestions what to plant.

**THE PALISADE NURSERIES**

**SPARKILL, N. Y.** **Perennial Specialists** **R. W. CLUCAS, Manager**

*J. H. Hale, the "Peach King," writes:* "The Double Action 'Cutaway' is a splendid tool. I use it in polishing off my peach orchards several times a year. A good pair of horses handle it all right."

The genuine "Cutaway" tools are used and endorsed by successful orchardists from coast to coast and bay to gulf.

In orchard work the driver can cultivate under the trees and below the low limbs, the horses not interfering with the branches. The double levers give the driver full control of tool at all times. For regular farm work the gangs can be drawn together.

**CUTAWAY DOUBLE ACTION ORCHARD HARROW**

Every orchardist and fruit grower should have one or more of these labor savers and fruit makers. They will positively pay for themselves in one season. To investigate is to be convinced.

Thorough cultivation makes large crops. Stirring the soil lets in the air, sunshine and new life, and kills foul vegetation. The "Cutaway" disk slices, stirs, lifts, twists and aerates the soil. Clark's "Cutaway" Tools run lighter and do better work than any other machine. Lasts a lifetime.

Send today for new catalog. *"Intensive Cultivation."* Of course, it's free.

**CUTAWAY HARROW COMPANY**

**902 MAIN STREET** **HIGGANUM, CONNECTICUT**

**Farr's Fancy Bulbs Imported to Order**

Have you thought about importing Tulips, Daffodils or Hyacinths from Holland especially for your garden? If you send me your order before July 1st, I can import just what you want and deliver the bulbs about the middle of September. My plan gives you better bulbs than you usually buy, for I order only what my customers require, and therefore have no losses on unsold bulbs.

**Special Discount of 10% on all orders received before July 1st**

The finest bulbs can be secured only by ordering early, and for this reason I give this extra discount. I will fill orders after July 1st, but I cannot guarantee such high quality bulbs.

*Send for my Bulb Book and learn about my plan; then make your selection at once, so that you may be sure of receiving Holland's finest bulbs for your garden.*

**Bertrand H. Farr, Wyomissing Nurseries**
**643 D Penn Street, Reading, Pa.**

**"Cream Quality" Bulbs for American Gardens**

For years past most of the choice Hyacinth, tulip and Narcissus bulbs have gone to England—we Americans got what were left and *thought* we were getting the best. For a number of years I have been able to import these extra choice bulbs by placing my order not later than June 25th.

**Hunt's "Cream Quality" Bulbs**

—will be a revelation to American gardeners; they are carefully selected, sound and solid. I know the varieties are of the highest quality, for most of them are in bloom in my trial grounds.

My book "The Cream of Holland" tells what varieties I import. Send for a copy today, and make your selection *at once*—for my orders must be sent to Holland not later than June 25th.

"Daffodils de Luxe" describes the latest novelties in these magnificent flowers—send for a copy if you are interested in them.

**CHESTER JAY HUNT**
**Box 123** **Montclair, New Jersey**

are still in pots. Give them plenty of water and give it to them often.

For fall and winter celery sow seed at once.

Do not neglect the strawberry and asparagus beds; keep them clean.

Sow cucumber seed now for pickles.

Egg plants should be watched every day; potato bugs multiply rapidly and can destroy the plants in a very short time.

Melons, will begin to ripen toward the last of the month. Keep all bruised and wilted watermelons picked off; the vines will fruit longer and the good melons will be larger.

The same may be said of the whole fruit garden; do not allow any fruit to rot on the trees or in the orchard. It will form a breeding place for all sorts of insects and diseases.

Georgia. Thomas J. Steed.

## An Earlv-blooming White Shrub

I THINK the most striking of all the early white-flowering shrubs is *Spiræa arguta*. Its long sprays of delicate, single, small flowers, of dazzling whiteness, extend to the tips of the branches, and give the shrub a light, feathery appearance which is lacking in the more popular Van Houttei. The flowers, coming on the bare branches, remain for three weeks or more, and then are succeeded by a graceful foliage which makes the bush attractive throughout the summer. *Spiræa arguta* is a hybrid of *S. Thunbergii* and *S. multiflora* and its merits do not seem to be adequately recognized.

In Northern Illinois *S. arguta* blooms three weeks earlier than Van Houttei, and is fading when the latter opens. This fact enables those seeking for white effects to secure six weeks of flowers by planting the two in combination.

But it is as a foil for other early blooming shrubs that *Spiræa arguta* proves most effective. Planted with *Forsythia intermedia*, which blooms at the same time, or with *F. suspensa* which begins to bloom a little earlier, it serves to subdue the too striking effect given by the forsythia alone, and, since it does not grow so tall, is useful for blending the forsythia with the ground. Plant arguta under the American red bud (*Cercis Canadensis*), in this locality a low-growing, shrub-like tree, for an excellent contrast, the lavender of the red bud being intensified by the white of the spirea.

*Spiraea arguta* is one of the most striking of all the early white-flowering shrubs

Arguta does not give its finest blooms until two or three years after transplanting, and it does best when the bushes are not closer together than three feet. Once established, it thrives wonderfully even when surrounded by sod, and requires little or no pruning.

It will bloom well in moderate shade, but, like other spireas, does best in full sunlight. Because of its erect, graceful form of growth and its light foliage, arguta does not appear at its best when used as a specimen plant, but should be planted in groups.

Illinois. Fred Haxton.

**Save Your Vegetables From Insects**

*Important to Vegetable and Truck Gardeners*

Don't let deadly insects destroy your crops! *Don't permit* Potato Bugs, Tobacco, Cabbage Currant, Appletree Worms, the Fly or Worm on Cucumbers, Squash or Melon Vines, or any other leaf eating Bugs to *infest* your crops and steal your profits. Get rid of them!

**PIERCE'S BUG KILLER**

**Destroys Leaf-Eating Insects**

It has been in use for 24 years—it is used by most of the successful growers in the country. It is simply dusted on—very easy to use, and it positively kills all leaf-eating insects. Very economical—low in cost—small quantity required. Worth its cost as a fertilizer alone.

**Sent Direct At Lowest Prices**

Pierce's Bug Killer is sent direct to you at the rock bottom factory prices. No jobbers' or dealers' profits—you pay only the low factory price.

| Prices | | |
|---|---|---|
| | 150 lb. sack | $2.00 |
| | 300 lb. bbl. | 4.00 |
| | 40 5-lb. Packages | 4.00 |

Don't wait until the deadly insects have played havoc with your plants and vegetables. Save your profits! Get your supply of Pierce's Bug Killer *right now.* Send check, money order, draft or paper currency. Send *at once.* Address

**Kelly Island Lime and Transport Co.**
**173 A Rockefeller Blvd. Cleveland, Ohio.** 12

A Mess of fresh **Mushrooms** at all Seasons Growing in your Cellar

**40 cts.** in postage stamps together with the name of your dealer will bring you, postpaid, direct from the manufacturer, a fresh sample brick of

**Lambert's Pure Culture MUSHROOM SPAWN**

the best high-grade spawn in the market, together with large illustrated book on **Mushroom Culture,** containing simple and practical methods of raising, preserving and cooking mushrooms. Not more than one sample brick will be sent to the same party. Further orders must come through your dealer.

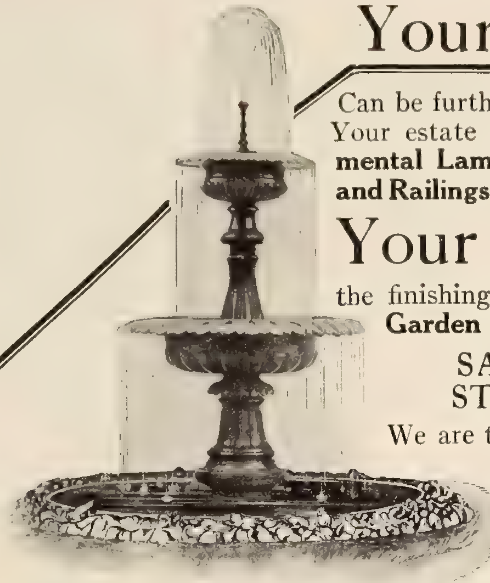
Address: **American Spawn Co., Dept. 2, St. Paul, Minn.**

**GALLOWAY**

**GARDEN TERRA COTTA**

THE GALLOWAY Collection has been greatly increased *for* the season *of* 1912 Send for New Catalog showing new designs executed *in* strong, durable Terra-Cotta

GALLOWAY TERRA COTTA CO
3214 WALNUT ST. PHILADELPHIA.



**Your Grounds**

Can be further beautified and made more distinctive. Your estate might require **Display Fountains, Ornamental Lamp Posts** for driveways, **Entrance Gates and Railings,** or perhaps

**Your Garden Requires**

the finishing touch of a **Flower Vase** or some other **Garden Ornament.** Then you may need

SANITARY FITTINGS FOR STABLE AND COW BARN

We are the oldest and largest concern designing and manufacturing everything in iron and bronze. Our experience and suggestions are offered gladly.

**Write Our Garden Department** for any information you desire also for catalogue of the particular product you are interested in.

**J. W. Fiske Iron Works** 56-58 PARK PLACE NEW YORK
Established 1858

**WIZARD Brand Pulverized Sheep Manure** is wonderfully effective—economical and convenient—superior to bone or chemicals for home fertilizing. It makes

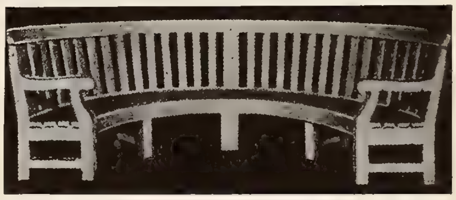
**A Beautiful LAWN and GARDEN**

because it is nature's best fertilizer in concentrated form—is unequalled for lawns — flowers — vegetables — trees — fruits—meadow and grain land.

**$4.00** per large barrel freight paid east of Omaha—cash with order. Ask for quantity prices and interesting booklet.

**The Pulverized Manure Co.**
**19 Union Stock Yards - - Chicago**
*Wizard Brand is sold by first-class seedsmen.*

WIZARD BRAND
ONE
BARREL EQUALS
2 WAGON LOADS
STABLE
MANURE



**OLD ENGLISH GARDEN SEATS**
**RUSTIC AND VERANDAH FURNITURE**
*Send for new Catalogue of many designs*
**North Shore Ferneries Co., Beverly, Mass.**

*By the Author of "The Circuit Rider's Wife"*

**THE RECORDING ANGEL**

BY CORRA HARRIS

*The First Printing, which was three times as large as that on any of Mrs. Harris's previous books, was sold out before publication. The Second Large Printing is just off the press.*

"The book brims over all through with the brighest and most daring kind of originality, clothed in a brand new form of expression that stimulates a reader's mentality much as the contact of cold clear water does a hot and dusty traveller."
— *Richmond Times*

*Illustrated in colors. Fixed price, $1.25*

Doubleday, Page & Company, Garden City, New York

Like a yard with shade trees and shrubbery, cool, seclusive and inviting, is the porch screened from the blazing sun with

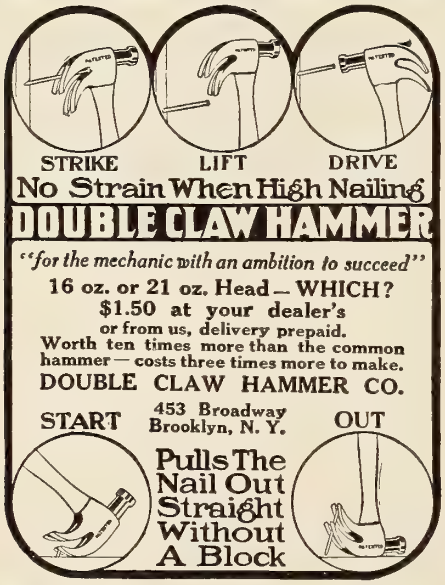
**Burlington Venetian Blinds**

You can easily fit your porch with Burlington Venetian Blinds, and you can readily adjust the blinds at an angle that will allow free circulation and yet keep out the hot sun.

**Write for FREE, Illustrated Booklet**

This booklet will show you that your porch can be that which it ought to be—your summer living room.

**Burlington Venetian Blind Co.**
**327 Lake Street, Burlington, Vt.**



No Strain When High Nailing

**DOUBLE CLAW HAMMER**

*"for the mechanic with an ambition to succeed"*

**16 oz. or 21 oz. Head — WHICH?**
**$1.50 at your dealer's**
**or from us, delivery prepaid.**
**Worth ten times more than the common hammer — costs three times more to make.**

**DOUBLE CLAW HAMMER CO.**
**453 Broadway**
**Brooklyn, N. Y.**

Pulls The Nail Out Straight Without A Block

**DUTCH BULBS and ROOTS**
Direct from Holland. Catalog full of vital facts FREE.
Write to-day to
Gt. van Waveren & Kruijff
American Branch House 140 N. 13th St., Philadelphia

*See detail advertisement on page 285*

***Good Cultivation***

If you would have a bigger, better garden, good cultivation is absolutely necessary. The home gardener, trucker, small fruit grower, can decrease labor, increase crops and profit by using Iron Age tools.

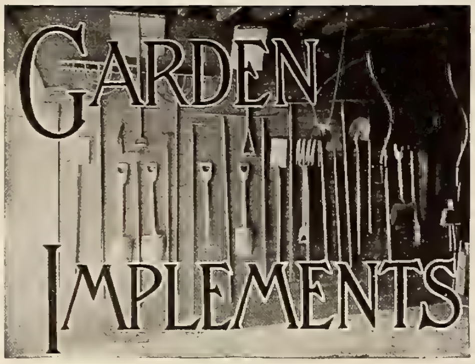
Our Single and Double Wheel Hoes are strong, light, compact. Easy to push—make gardening a real pleasure. Special attachments for a dozen uses. Perfect weed killers, cultivators, hillers, etc. We are wheel hoe specialists. If you need a garden tool, you need an

**IRON AGE**

Attachments can be added as needed; they reduce tool expense. Ask your dealer to show them. And send for free booklets of complete line of garden, orchard and field labor-saving tools. A postal will bring them promptly.

No. 1
Double
or Single
Wheel Hoe

**Bateman M'f'g Co.,**
**Box 5351 Grenloch, New Jersey.**



# GARDEN IMPLEMENTS

## Necessary Garden Tools

THE really necessary equipment of tools for the home garden is not an item of much expense; twelve or thirteen dollars will be ample for most people. In order to take any pleasure in gardening and to derive any profitable results from one's labors, we must have the right tools for the work.

The thorough plowing and harrowing which precedes all successful gardening requires a one-horse plow and a harrow, but since these are used but once during the season, they may be hired. Otherwise use a spade.

Get tools that are strongly made and of the best material. A cheap article is simply a waste of money, for it will not last any length of time. Have the tool house convenient to the garden, and be sure to put the tools away when they are not in use.

The following, while not all tools, *are* necessities. The prices are approximate; there may, of course, be some change from year to year:

| | |
|---|---|
| Steel-toothed rake of 12 or 15 teeth | $ .60 |
| Hoe | .45 |
| Spade of best steel | 1.50 |
| Shovel | 1.50 |
| Steel manure fork | 85 to 1.25 |
| Trowel, 6-inch | .50 |
| Pruning shears for grape vines, etc | 1.50 |
| Tin can, with rigid handle and perforated bottom, for dry insecticides | .40 |
| Wheelbarrow | 3.50 to 5.00 |
| Small-handled basket for gathering vegetables | .25 |
| Scoop for applying fertilizer | .10 |
| Twine | .10 |

To this may be added from time to time such conveniences as

| | |
|---|---|
| Broad-tined fork for digging about trees | $1.00 |
| Hoe with blade turning back (like a double plow share) for furrowing and covering seeds | .75 |
| Double wheel hoe with various attachments | 7.35 |
| Mole trap | 1.50 |
| Reel | 2.85 |
| Rubber hose, ¾-in., 100 ft | 15.00 |
| Knapsack sprayer for trees and plants, with copper tank and brass pump attachment | 14.00 |

This knapsack sprayer is carried upon the back, the agitator being operated by one hand and the nozzle by the other. The brass and copper portions resist the corroding nature of the fungicide.

Never expose the garden hose to the very hot sun. Put it under shelter when it is not in use.

New Jersey. M. Roberts Conover.

## My Home-made Garden Roller

IN SOUTHERN California, when a garden roller is needed, it is wanted quickly. If it is necessary to send away for it, the chances are that the rainy season may be over before it comes, and in the dry season it is about as useful as a feather duster.

Recently, I was in the predicament of wanting a garden roller, and did not know from where I could buy, beg, bag, borrow, or steal one. So I decided to make one.

I told the grocery boy to bring me the biggest cylindrical can he could find, impressing upon him that it must be cylindrical. The next day he produced a fifty-pound lard-pail, and apologized for the handles. As a matter of fact, the latter served a useful purpose before they were removed.

I cut a piece of five-eighths, round bar-iron five inches longer than the height of the lard pail; made a five-eighths-inch hole in the exact centre of the bottom and another in the centre of the lid

**Modern Sleeping Porch Fitted with Wilson's Blinds**

Practically makes an Outdoor Room of the ordinary porch; a room at night, a porch by day.

**WILSON'S VENETIANS**

for **outside** and **inside** of town and country houses; very durable, convenient and artistic.

**Special Outside Venetians**

most practical and useful form of Venetian yet devised for porches and windows: excludes the sun, admits the breeze.

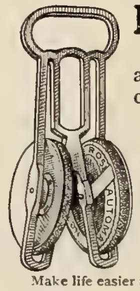
*Write for Venetian Catalogue No. 4.*

**Orders should be placed now for summer delivery.**

**Jas. G. Wilson Mfg. Co.**
**1 & 3 West 29th St. New York**

**Also Inside Venetians; Rolling Partitions, Rolling Steel Shutters, Burglar and Fireproof Steel Curtains, Wood Block Floors.**

**A HOUSEHOLD NECESSITY**



Here's the simplest, handiest and most efficient household article ever made.

**The "Universal" Sharpener**

It puts a keen lasting edge in a few seconds on either kitchen or table knives, or on pocket knives. No excuse now for a dull knife in the house.

**Price, Postpaid, 50c**

Make life easier and happier by sending for this article today

**ARTHUR C. EDDY, P. O. Box 355, Thompsonville, Conn.**

**ALCA GARDEN TOOL**

TROWEL

**Makes Garden Work Easy**
**Combines Five Useful Garden Implements in One**
**TROWEL—FORK—HOE—WEEDER—DIBBER**

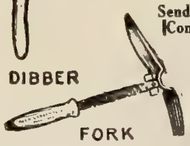
A Labor Saving Article for Garden or Greenhouse used in Weeding, Digging, Planting and Transplanting

Compact and rigid in any position — built to last. Each tool released by a spring.

DIBBER

WEEDER

**Send 50c for the Whole Combination if your dealer cannot supply you**



FORK

HOE

**Alca Mfg. Co.**
**366 W. 50th Street**
**New York**

**BONORA for Flowers and Vegetables**

THE GREATEST DISCOVERY OF MODERN TIMES
NATURES PLANT FOOD
BONORA
BONORA CHEMICAL CO.
584 BROADWAY, NEW YORK

Bonora is the greatest fertilizer in the world. Results are wonderful. Will make your flowers and vegetables grow as if in the tropics. Makes all plant life mature three weeks earlier. Descriptive circulars upon application. Order from your seed dealer.

Put up as follows:

| | | | | |
|---|---|---|---|---|
| 1 lb. | makes | 28 gallons | .65 postpaid |
| 5 lbs. | " | 140 " | $ 2.50 |
| 10 " | " | 280 " | 4.75 |
| 50 " | " | 1400 " | 22.50 |

**Bonora Chemical Co.** 515 Broadway New York

The "Old Hickory porch" is the popular one. Its rustic charm and enduring comfort make it the favored spot on summer afternoons and evenings. Make your summer comfort complete by fitting your lawn and porch with genuine

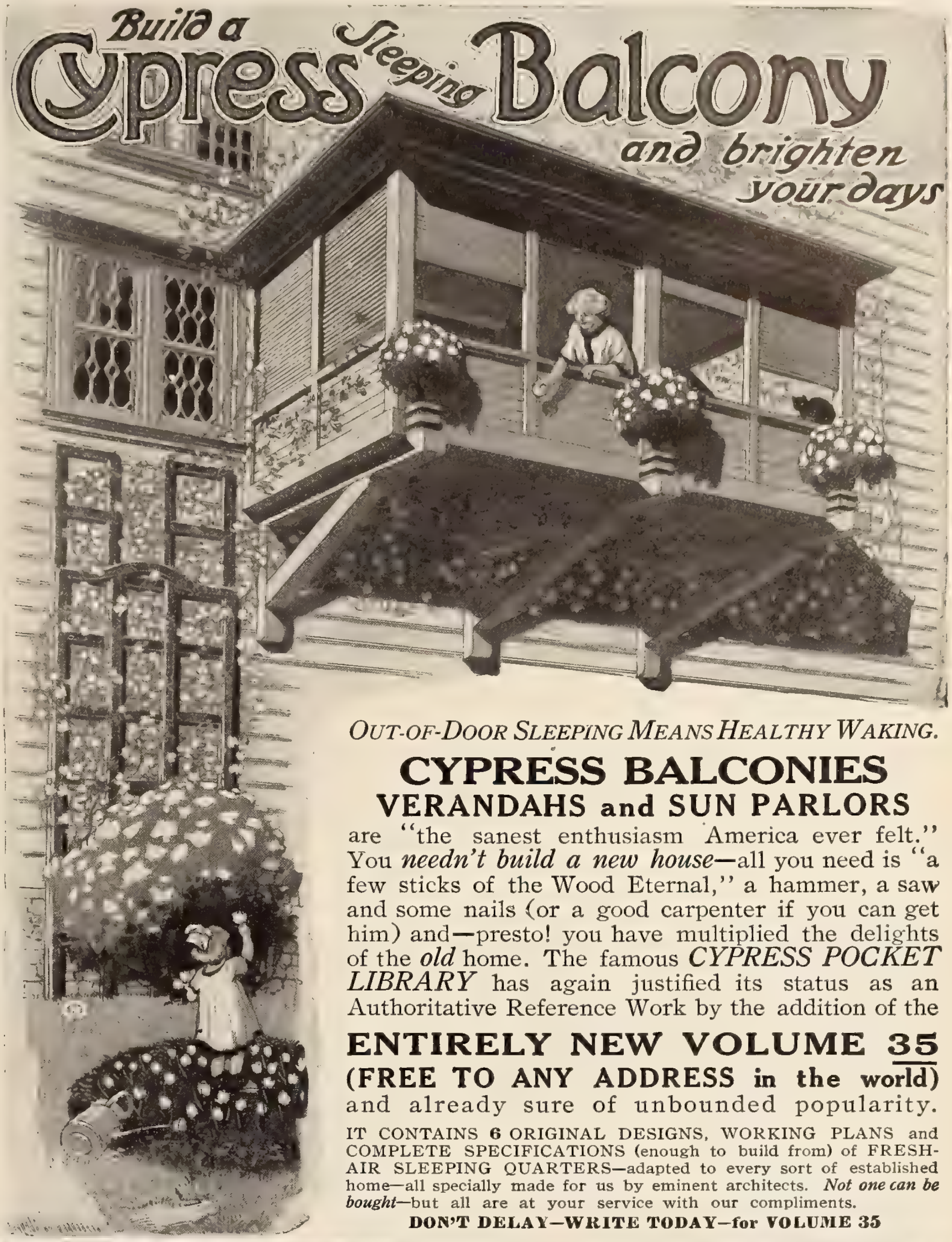
## Old Hickory Furniture.

On the most extensive country estates in America, as well as in the less pretentious summer homes and cottages, Old Hickory has made an enviable place for itself, because it has superior beauty and gives lasting ease.

*May we send the handsome book on "Old Hickory Furniture" we've prepared for you? It will give you all the information you'll need to make your out-door comfort complete.*

**The Old Hickory Chair Co.**
405 South Cherry St.
**Martinsville, Indiana**

TRADE OLD HICKORY CHAIR CO. MARTINSVILLE IND MARK
Trade Mark burned in wood


Build a Cypress Sleeping Balcony and brighten your days

*OUT-OF-DOOR SLEEPING MEANS HEALTHY WAKING.*

## CYPRESS BALCONIES
### VERANDAHS and SUN PARLORS

are "the sanest enthusiasm America ever felt." You *needn't build a new house*—all you need is "a few sticks of the Wood Eternal," a hammer, a saw and some nails (or a good carpenter if you can get him) and—presto! you have multiplied the delights of the *old* home. The famous *CYPRESS POCKET LIBRARY* has again justified its status as an Authoritative Reference Work by the addition of the

**ENTIRELY NEW VOLUME 35**
**(FREE TO ANY ADDRESS in the world)**
and already sure of unbounded popularity.

IT CONTAINS 6 ORIGINAL DESIGNS, WORKING PLANS and COMPLETE SPECIFICATIONS (enough to build from) of FRESH-AIR SLEEPING QUARTERS—adapted to every sort of established home—all specially made for us by eminent architects. *Not one can be bought*—but all are at your service with our compliments.

**DON'T DELAY—WRITE TODAY—for VOLUME 35**

When planning a Mansion, a Bungalow, a Farm, a Sleeping-Porch or just a Fence, remember—*"With CYPRESS you BUILD BUT ONCE."*

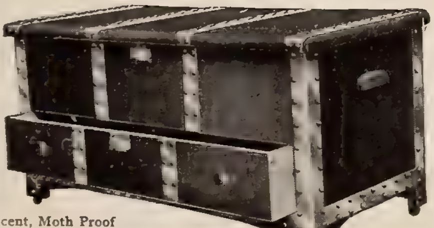
Let our "ALL-ROUND HELPS DEPARTMENT" help YOU. Our entire resources are at your service with Reliable Counsel.

**SOUTHERN CYPRESS MANUFACTURERS' ASSOCIATION**
**1209 HIBERNIA BANK BUILDING, NEW ORLEANS, LA.**

INSIST ON CYPRESS AT YOUR LOCAL DEALER'S. IF HE HASN'T IT, *LET US KNOW IMMEDIATELY*

CROSBY-CHICAGO.

## Moth-Proof Cedar Chest

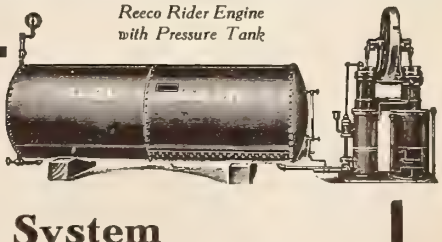


**Affords Absolute Protection Against Moths**

**Sent on 15 Days' Free Trial**

This magnificent, Moth Proof Piedmont Red Cedar Chest sent any-where on 15 days' free trial. Place it in your own home at our expense and see for yourself what a beautiful, useful and desirable piece of furniture it is. **Moth, mouse, dust and damp proof. Makes unique Bridal gift. Direct from factory to you at factory prices.** Freight prepaid. **BEAUTIFUL BOOK FREE!** Send for big 56 page illustrated free book showing all styles and prices and particulars of free offer.

**PIEDMONT RED CEDAR CHEST CO. Dept 0. Statesville, N. C.**



*Reeco Rider Engine with Pressure Tank*

## Fifty Thousand Perfect Water Systems

Think of nearly 50,000 "Reeco" Water Supply Systems now in use and giving perfect service! Thousands of these have been in constant use 20 years and more. Only the

## "REECO" Water System

can boast such a record of actual performance. It is a guarantee of reliability and efficiency, carrying far more weight than mere words. "REECO" HOT AIR PUMPS and "REECO" ELECTRIC PUMPS provide unlimited water for factories, hotels, country residences, etc. Equipped with elevated or pressure tanks — any capacity. Simplest, most economical — safest and most dependable water systems in the world. We make complete installations — furnish all equipment when desired.

**RIDER-ERICSSON ENGINE CO.** Write nearest office for catalogue U
New York. Boston. Philadelphia. Montreal, P. Q. Sydney, Australia

*David Grayson*

**"Adventures in Friendship"**

"Adventures in Friendship" is an attractive book, rich in insight into character and alive also with the charm which comes to a man who keeps his eyes open to the magic appeal of nature."
—*London Standard.*

**"Adventures in Contentment"**

"The proper word to apply to this book is charming, for these little stories of life in a back country village are told with a quiet humor and kindliness that remind one of the days of Mrs. Gaskell and Miss Mitford."—*Indianapolis News.*

*Charming illustrations in black and white and full colors by Thomas Fogarty.*

*New Leather Edition, each volume, Fixed price, $1.50 (postage 15c.)*
*Cloth, Fixed price, $1.35 (postage 14c).*

Garden City **DOUBLEDAY, PAGE & COMPANY** New York

**Write for 16 Page Catalog of**

**BASQUETTE**
**LAWN & PORCH**
**FURNITURE**

**W. H. & CO., Grand Haven, Mich.**

**DUTCH BULBS and ROOTS**
Direct from Holland. Catalog full of vital facts FREE
Write to-day to
Gt. van Waveren & Kruijff
American Branch House 140 N. 13th St., Philadelphia
*See detail advertisement on page 285*

**Japan Bamboo Stakes**

Strong, durable—can be used year after year. Do not decay like Southern cane or wooden stakes. Suitable for Roses, Gladioli, Lilies, Chrysanthemums, Pot and Herbaceous plants.

| | 100 | 250 | 500 | 1,000 |
|---|---|---|---|---|
| Green Colored, 2 ft. | $0.75 | $1.75 | $3.25 | $6.00 |
| Green Colored, 3 ft. | 1.50 | 3.00 | 5.50 | 10.00 |
| Natural Cane, 6 ft. | 1.00 | 2.00 | 3.00 | 6.00 |

For the support of *Dahlias, Tomatoes*, Pole-beans, shrubs, young trees, we offer extra-strong stakes.

| | 12 | 100 |
|---|---|---|
| 6 ft. long, ¾ to 1 in. diameter | $1.00 | $7.00 |
| 8 " " " " " " " | 1.25 | 8.00 |

*Fall Bulb Catalog ready July 1. Send us your name. Address.*
**H. H. BERGER, Dept. 27, 70 Warren St., New York City**

**MORE FRUIT** from your trees if you keep them free from San Jose Scale, Aphis, White Fly, etc. by spraying with

**GOOD'S CAUSTIC POTASH FISH OIL SOAP No. 3**

Kills all tree pests without injury to trees. Fertilizes the soil and aids healthy growth.

**FREE** Our valuable book on Tree and Plant Diseases. Write today.

**JAMES GOOD, Original Maker, 931 N. Front Street, Philadelphia.**

THE REAL FAIRY FOLK
BY LOUISE JAMISON

This is a very winsome story of how a lonely child finds a fairy world all about her and learns those interesting things about nature which are a closed book to so many of our younger folk.

*About 60 illustrations; one full page in colors, and many in black and white by J. M. Gleeson. Net, $1.00 (postage 10c.)*

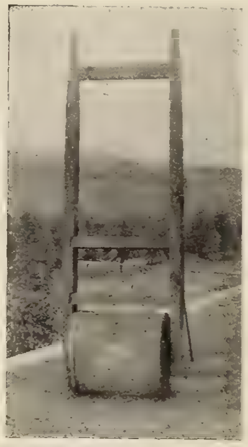
Fairy Tales a Child Can Read and Act
BY LILLIAN E. NIXON

This volume contains a number of those juvenile classics which have delighted generation after generation, arranged with full directions for acting. Children the world over love to enact the stories that they read and Miss Nixon has made this easy with her simple instructions as to costumes (all of which may be made at home), dialogue and playing.

*Illustrations in black and white by R. J. Herbert. Net, 75c. (postage 7c.)*

GARDEN CITY DOUBLEDAY, PAGE & CO. NEW YORK

of the pail; rested the pail on a couple of blocks or wood, and put the iron bar through the bottom of it, leaving two and a half inches of the bar sticking out to hold the framework. Then I made a mixture of two parts of coarse sand and one of cement, and added sufficient water to make it fairly sloppy. Some of this was put in the pail, then some stones that had been thoroughly washed, then more cement mortar, taking care that the interstices between the stones were thoroughly filled by ramming, and so on, until the pail was full. A little more cement mortar was then added, a few holes punched in the lid of the can with a nail, and the lid put on the can. A piece of rope was then tied over the lid from handle to handle, and wooden wedges driven between the lid and the rope. This forced the surplus water out through the nail holes in the lid, and made the mixture within the pail compact. The pail was allowed to remain for a couple of days, when the lid was soldered in place, the rope removed, and the handles taken from the can by filing the rivets.


A garden roller made out of a 50-pound lard pail!

For a frame, two-by-four studding was used. The cross pieces were let half an inch into the side pieces, to give rigidity. Five-inch nails were used in putting the frame together. To keep the roller from rubbing against the frame, three five-eighths-inch washers were placed on the spindle on either side of the roller.

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California F. H. Mason.

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In labeling trees it is best to print the name as far as possible to one end of the strip and nail the label to the tree at the blank end. It will be many years before the tree will need relabeling. As the tree grows the bark will slowly close over the nail head and blank end of the label. In making labels to be stuck in the ground it would be best to tack them on to strips of cypress which will last for many years without rotting. Cedar will be found a fair substitute, but pine or other soft woods will not last for more than a year or two.

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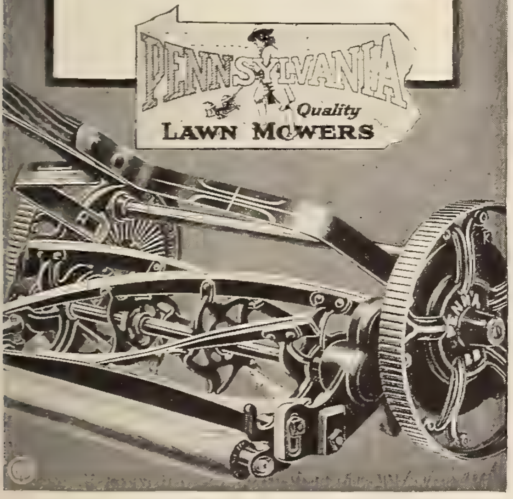

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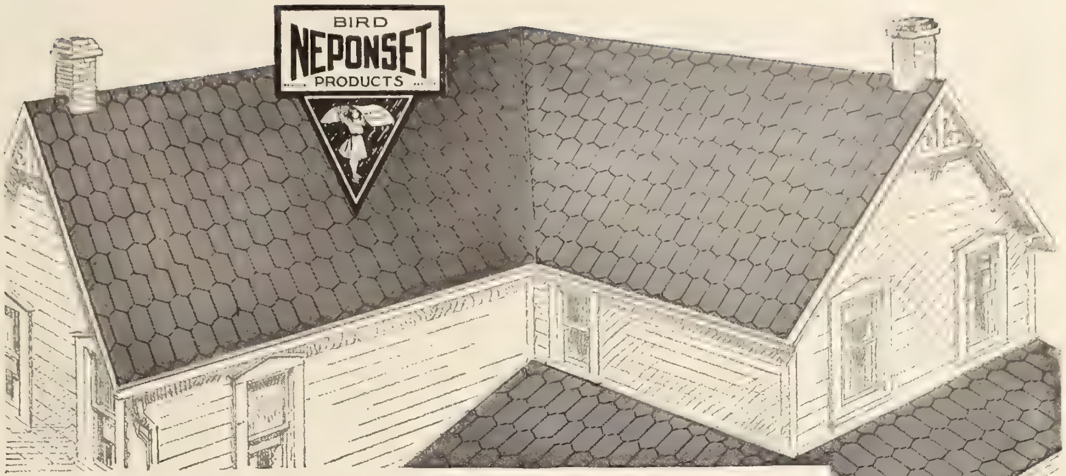

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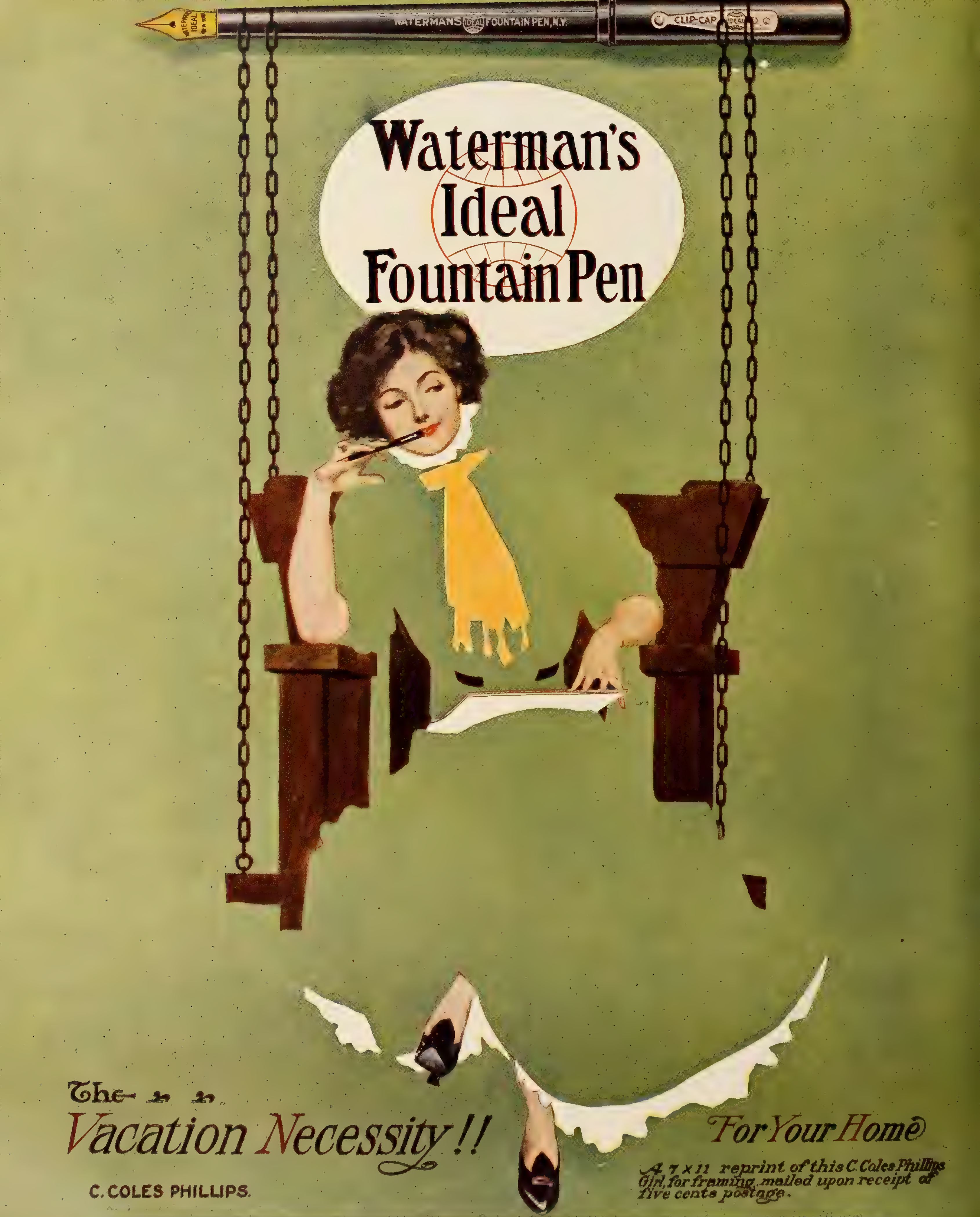
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JULY
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Vol. XV. No. 6

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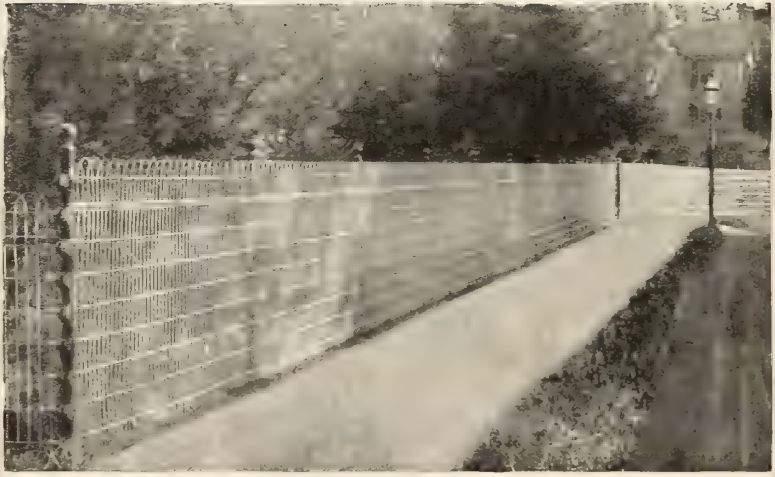

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JULY, 1912

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**Write for my Strawberry Booklet,** I will gladly mail a copy to you **FREE.** It tells all about the **Jersey Giants,** and gives full descriptions of **twenty-five other choice varieties,** with prices, **and full cultural directions.**

**August is the time to plant — now is the time to order.** It takes time to properly prepare the bed for plants. I'll tell you how to do it for largest yield of biggest and juiciest berries. Write now while you think of it.

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| .... | Narcissus Barri Conspicuus | .20 | 1.15 | 4.50 |
| .... | Narcissus Van Sion (Double Daffodil) | .30 | 1.85 | 8.50 |
| .... | Narcissus Orange Phœnix, lovely | .25 | 1.50 | 6.50 |
| .... | Narcissus Sulphur Phœnix, splendid | .40 | 2.25 | 9.00 |
| .... | Narcissus Single Jonquils | .15 | .75 | 3.00 |
| .... | Narcissus Bicolor Empress, one of the best for all purposes | .40 | 2.75 | 12.50 |
| .... | Narcissus Emperor, magnificent | .45 | 2.75 | 12.50 |
| .... | Narcissus Golden Spur, Yellow Trumpet | .40 | 2.35 | 10.50 |
| .... | Narcissus Princeps, Yellow Trumpet | .25 | 1.35 | 5.50 |
| .... | Narcissus Alba Stella, lovely | .20 | 1.00 | 4.00 |
| .... | Narcissus Cynosure, very distinct | .20 | 1.25 | 4.75 |
| .... | Narcissus Sir Watkin, immense flower, splendid | .35 | 2.25 | 10.00 |

### TULIPS

| Quantity Wanted | TULIPS | Per doz. | Per 100 | Per 500 |
|---|---|---|---|---|
| .... | Fine Mixed Single | .. | .75 | 3.50 |
| .... | Extra Fine Mixed Single | .. | .95 | 4.25 |
| .... | Extra Fine Mixed Double | .. | 1.15 | 4.75 |
| .... | Extra Fine Mixed Parrot | .20 | 1.25 | 4.75 |
| .... | Chrysolora, Fine Yellow | .20 | 1.15 | 4.50 |
| .... | Keizerkroon, Red and Gold, splendid | .25 | 1.65 | 7.00 |
| .... | La Reine, Rosy White | .18 | 1.15 | 4.50 |
| .... | L'Immaculée, Pure White | .18 | 1.10 | 4.50 |
| .... | Rembrandt, Scarlet | .40 | 2.75 | 11.25 |
| .... | Murillo, Pink, finest double | .25 | 1.25 | 6.00 |
| ... | Gesneriana (True), magnificent late crimson variety | .30 | 1.65 | 7.00 |
| .... | Bouton d'Or, Yellow, late, splendid | .30 | 1.85 | 7.00 |
| .... | Blushing Bride, late, Rose-Pink, superb and distinct | .25 | 1.50 | 6.75 |

### DARWIN TULIPS

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| Quantity Wanted | DARWIN TULIPS | Per doz. | Per 100 | Per 500 |
|---|---|---|---|---|
| .... | Farncombe Sanders. Immense flower of the most brilliant scarlet; one of the best Darwins; very tall and the most glorious tulip in cultivation | $0.70 | $4.75 | .. |
| .... | Pride of Haarlem. Carmine-pink: large; a grand variety | .45 | 3.25 | $13.50 |
| .... | Special Mixture Darwin Tulips. One of our growers finds that he has too long a list of Darwin Tulips, and to reduce it he is making a special mixture of named varieties. We do not claim that the finest sorts will be found in this mixture, but it is very superior to the usual mixtures | .30 | 1.75 | 8.00 |
| .... | Fine Mixed Darwin Tulips | .25 | 1.40 | 6.00 |
| .... | 100 Darwin Tulips, in 25 varieties (not less than 100 furnished) | .. | 4.00 | .. |

### HYACINTHS

| Quantity Wanted | HYACINTHS | Per doz. | Per 100 | Per 500 |
|---|---|---|---|---|
| .... | Single Mixed | .45 | 3.00 | 13.75 |
| .... | Single Mixed, White | .50 | 3.50 | .. |
| .... | Single Mixed, Red | .50 | 3.50 | .. |
| .... | Single Mixed, Blue | .50 | 3.50 | .. |
| .... | Single Mixed Miniature Bulbs | .35 | 2.25 | .. |
| .... | Charles Dickens, best Pink | 1.45 | 9.75 | .. |
| .... | King of the Blues, best Dark Blue | 1.10 | 8.00 | .. |
| .... | Queen of the Blues, best Light Blue | 1.50 | 10.00 | .. |
| .... | La Grandesse, best White | 1.60 | 10.50 | .. |
| .... | Ida, best Yellow | 1.30 | 9.00 | .. |

| Quantity Wanted | HYACINTHS—Cont. | Per doz. | Per 100 | Per 500 |
|---|---|---|---|---|
| .... | La Victoire. Brillant red; one of the earliest. By far the best of its color. A grand Novelty | $2.40 | $15.00 | .. |
| .... | Second-size bulbs | 1.75 | 12.00 | .. |
| .... | General Pelissier. Deep Scarlet; early; extra-fine | 1.10 | 7.65 | .. |
| .... | Regulus. Light Blue with Dark Stripes | .90 | 6.75 | .. |
| .... | Grande Blanche. Blush White; large bells and large spikes | .95 | 6.50 | .. |
| .... | La Franchise. Waxy White, large bells | 1.00 | 7.00 | .. |

### CROCUSES

| Quantity Wanted | CROCUSES | Per doz. | Per 100 | Per 500 |
|---|---|---|---|---|
| .... | Fine Mixed, not recommended | .. | .45 | $2.00 |
| .... | Baron von Brunow, Dark Blue | .. | .85 | 3.75 |
| .... | Grand Lilac, Lilac | .. | .85 | 3.75 |
| .... | Mont Blanc, best White | .. | .85 | 3.75 |
| .... | Sir Walter Scott, best Striped | .. | .85 | 3.75 |
| .... | Large Yellow Mammoth Bulbs | .. | .90 | 4.00 |

### MISCELLANEOUS

| Quantity Wanted | MISCELLANEOUS | Per doz. | Per 100 | Per 500 |
|---|---|---|---|---|
| .... | Allium Neapolitanum | .18 | 1.00 | 3.50 |
| .... | Chionodoxa Lucillæ (Glory of the Snow) | .15 | .90 | 4.00 |
| .... | Iris, English Mixed | .20 | 1.25 | 4.75 |
| .... | Iris, Spanish Mixed | .10 | .45 | 1.75 |
| .... | Iris, Japan Mixed | 1.25 | 6.00 | 25.00 |
| .... | Iris, German, named 25 varieties | 1.25 | 8.00 | 35.00 |
| .... | Grape, Hyacinths, Blue | .15 | .70 | 2.50 |
| .... | Grape Hyacinths, White | .15 | 1.00 | 3.50 |
| .... | Scilla, Sibirica, Blue, lovely for naturalizing | .18 | 1.00 | 4.50 |
| .... | Snowdrops, Single | .15 | .75 | 3.25 |
| .... | Snowdrops, Giant | .15 | .75 | 3.25 |

*Signed*.......................................................... *Address*..........................................................

***5 per cent. may be deducted if cash is sent with order*** ..........................................................

# The Garden Magazine

VOL. XV—NO. 6
PUBLISHED MONTHLY

JULY, 1912

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The MONTH'S
REMINDER

[For the purpose of reckoning dates, New York is generally taken as a standard. Allow six days' difference for every hundred miles of latitude.]

## July 4th and the Gardener

INDEPENDENCE DAY is rightly named, for it is just about the date that brings freedom from the depredations of the rose chafer. Don't let up on him, however, just because he disappears in July. Every bug you kill in the freshness of its youth means several hundred less eggs to hatch next year.

Speaking of freedom, no one can better appreciate its meaning than the owner of a successful garden. He is independent of the supplies of the grocery store and the peddler of fresh (?) vegetables (with plenty of "greens" on hand, even the meat bill can be greatly cut down); he is independent of the doctor, for the man who tends a garden rarely lacks appetite and suffers few pangs but the almost enjoyable ache of healthful weariness; he is independent of the need of excitement and expensive amusements, for the care of flowers and vegetables is a fascinating entertainment in itself — for children as well as grown folks. It takes a garden to transform a house into a home. And in July every garden should be at its best. Is yours?

Are you getting plenty of color and cut flowers every week?

Are you getting vegetables enough in proportion to the space occupied and the time and money expended?

Are the color combinations in border and edging harmonious? Are the perennials correctly placed as to height and mass?

Are you keeping all the land busy all the time by means of succession, intercropping and transplanting?

How easy is it for you (or someone else) to find weeds in your garden?

Your answers depend largely upon how your garden was planned and executed. Is it as successful as you expected? Then tell THE GARDEN MAGAZINE about it.

Have some of your schemes failed? Then talk them over with us just the same. Perhaps we can evolve a cure; your experience will certainly help many a fellow gardener.

## The Midsummer Routine

FOR the sake of the daily results keep up the watering and the cultivating. Notice the methods of thunder showers and in using the hose imitate them. In other words, when you see that the ground needs water, soak it thoroughly. A light sprinkling is about as useful as a glass of salt water for a thirsty man.

If your rows are long and straight — as they should be — your best cultivating tool is the wheel hoe or hand cultivator. But a pretty close second, in my estimation, is the English type of scuffle hoe. For shallow soil loosening close to the tomatoes, cabbage and other individual plants it cannot be excelled.

All this for present day needs. For future returns plant and transplant all the time. The mid-season celery should be set in its permanent rows without delay; the late crop may now be sown in a seed-bed.

Start cucumbers for late pickles whereever there is extra space and let the plants set all the fruit they will. By pinching back the terminal buds you can get earlier fruits but not so many of them.

String beans, radishes, beets, corn and kohlrabi may be planted at two-week intervals.

Lettuce should go in every week or ten days but it will not stand much hot sunlight. Better sow it in a bed where it can be shaded with a cloth sash. Cover transplanted heads with old paper pots, berry boxes or newspapers until they are well recovered from the shock.

Sow the winter varieties of turnip and radish. The latter are still somewhat of a novelty in this country, but they are not nearly as strong as their size would indicate.

Early potatoes are about ready. After digging, rake up and destroy the tops, work over and level the soil and hustle in some one of the crops mentioned above Use a variety that your seedsman recommends for late season planting.

The fruits need some attention. Pinch back the young raspberry and blackberry canes to two and a half and three feet respectively, and their laterals in proportion. This gives you a low, stocky, strong growth for next year's fruiting and enables you to cut out the old canes as soon as they have borne this summer.

Currants are liable to attacks by worms. Use hellebore in preference to arsenical preparations at this time.

Some paper or mosquito-netting bags on bunches of grapes and clusters of currants will insure just that much early fruit of the best quality.

Begin a preliminary thinning of the larger fruits.

The cucurbits or gourd family of vegetables are especially liable to injury by squash bugs and blight. Slaked lime and tobacco dust for the former and Bordeaux mixture for the latter are standard defensive weapons.

The majority of H. P. roses will soon cease blooming for the season. Then cut them back and shape them so as to develop a well formed bush by fall. The subsequent winter pruning will result in a strong spring growth and high class blooms.

Send in your orders for all autumn bulbs now. They will be delivered about the same time that a special article on their care and management will appear in THE GARDEN MAGAZINE. Besides, the first orders always get the best and promptest attention. If you order (as you should) your spring seeds in January, it is logical that you get your fall order in by July.

As the muskmelons swell slip a piece of shingle under each fruit to keep it clean and to prevent the development of rot. A melon is not ripe till it parts from the stem at the slightest touch. Don't try to pick them until then.

To reward the asparagus bed for what it has already done, work in a dressing of salt — five pounds to one hundred square feet.

Nitrate of soda is the necessary stimulant to overcome the lassitude of the hot weather. Scatter it thinly along the rows of all crops in which a good growth of vine or foliage is desired.

The one time when chickens may be admitted to the garden is when there are asparagus beetles to be destroyed. In the same way the services of a few ducks should be obtained to eliminate potato bugs.

In tying up cauliflower heads be sure there is no moisture in the centre, or the head will certainly rot.

By cutting cabbage instead of pulling it, you stimulate a growth of small shoots that are deliciously tender and mild.

Plants grown to stake and pruned to only three stems will bear more and better fruits than untrained plants

# Ideal Tomatoes for the Home Garden—By Adolph Kruhm, Ohio

### TEN VARIETIES THAT ARE REALLY WORTH WHILE, HAVING REGARD TO EARLINESS, YIELD, QUALITY, AND TABLE USE—WHY THE STANDARDS FOR HOME USE AND MARKET DIFFER

[EDITORS' NOTE — *This is the second vegetable article in Mr. Kruhm's series of critical analysis of varieties from the standpoint of the home garden. Nothing of so searching a nature has yet been published. The author takes you into his confidence and tells you exactly how he measures your needs, and helps you to determine just what type or variety will best suit your individual requirements.*]

NEARLY five hundred differently named sorts of tomatoes may be counted by gardeners interested in American seed catalogues. Making due allowance for renamed sorts, strains offered in different parts of the country under different names, and slight variations produced in the strains under the influence of different climes and soils, this vast number can be sifted down to about sixty. Deducting from this about a dozen odd and small fruited sorts which are not considered in this article, leaves about fifty distinct standard sorts worthy of serious study in connection with our gardening problems.

Many years of intensive observation have made the analysis of these fifty comparatively easy. There are pink, or purple sorts, bright red or scarlet sorts, and yellow or golden sorts among the large fruited tomatoes. Add to these prominent characteristics the latest achievement — the evolving of a perfectly round tomato, and we have four distinct classes requiring consideration. Yellow or golden tomatoes are comparatively little grown. To pick out from among the red and the purple sorts those ten that would make an ideal home garden collection for many parts of the country, seems well worth while.

Magnus. A favorite for the South. Note the heavy foliage

Tomatoes differ in merit (quality and productiveness) according to the soil and climate which produce them, the purpose for which they are grown, and the use for which they are intended. Some sorts thrive well in light, sandy soils; while others require loam or clay for good development. Some sorts are good for market purposes, while others are good for the home garden only, because their skins are too tender to permit shipping. The shape of some tomatoes makes their economical handling and packing impossible. Modern tendencies stamp waste as a crime. Consumers are learning to look for tomatoes of improved shape (deep through from stem to blossom end) because their use is an economy. A well-shaped tomato of moderate size, say not to exceed $3\frac{1}{2}$ inches in diameter, offers less problems in preparation for use than a large, overgrown specimen of which half is usually unfit for use on account of indenture at stem end, green core or rough skin. Very large fruits are unwieldy in use, but some growers like the satisfaction of immensity. For all such there are the giant fruited Ponderosa and Beefsteak, good in flavor, productiveness and solidity.

Dwarf Stone. A reliable kind for the small garden

The foregoing factors, together with some reasons of minor importance, will be considered in connection with the various sorts described hereafter. Their most pronounced characteristic is their adaptability to climatic conditions existing in nearly all parts of the United States. This list is not arbitrary. Many sorts do well in sections where some or all named here may prove deficient. But their usefulness is limited to small areas, and for this reason they could not be recommended along the broader lines which this article attempts to cover.

After forming theories on this subject for years, the elect few varieties have stood the final test during the last few years in the home garden. No one variety received more coaxing or attention than the others. All were planted in the same fashion, cultivated, staked and pruned according to common methods and results were carefully noted from day to day. The facts and truth about each are set forth in an unbiased way. The few cultural hints and pruning directions at the end of this article should help other planters to secure equally satisfactory results.

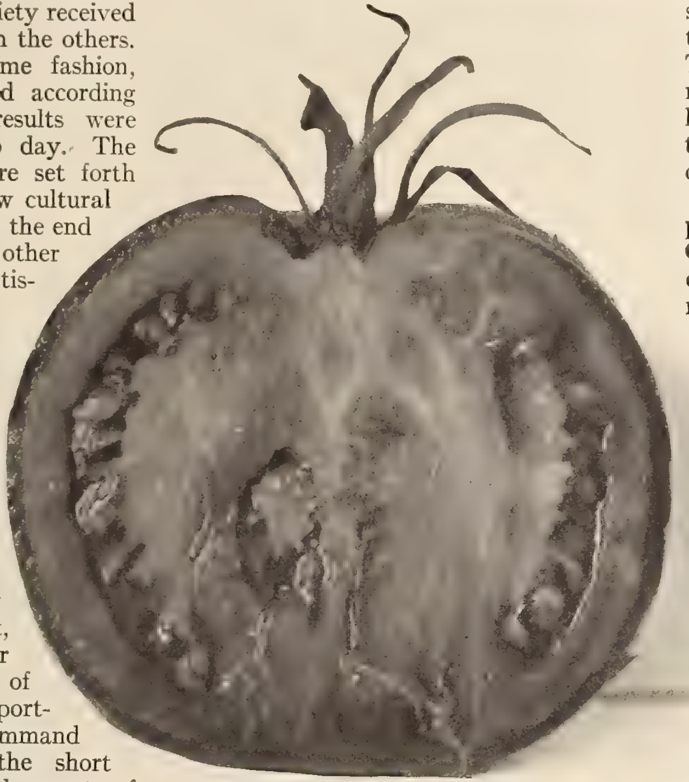
### THE FIVE SCARLET SORTS

**Spark's Earliana** is without question the earliest scarlet tomato. The truth of this statement is proven by the fact that growers are giving increased attention to it every year and one tries to eclipse the other by making selections for earliness. In southern New Jersey, the home of this sort, plants set out early in May bear fruits soon after the middle of June, when they reach the important eastern markets and command fancy prices. Considering the short period required for the development of its fruits, Sparks' Earliana is of good size, has a strong skin and thick outer walls of meat, all of which make it an ideal market tomato. Flesh is solid, of good color and of decided acid flavor — a quality esteemed by many.

**Chalk's Early Jewel** is well named. First fruits mature about ten days later than those of Earliana, but are larger and of better quality. This is the ideal scarlet sort for the home garden as well as for market. Its season is the longest of any that I know because the crops usually require four pickings in field culture against two or three of other sorts. While in size it is almost equal to Stone, the flesh is not quite so solid, hence the difference in weight. Fine for slicing purposes and a ready seller on account of its beautiful, smooth skin. Milder than Earliana.

**Stone** has for many years been the leading scarlet main crop sort and will be, until Coreless (described next) becomes better known. Its name is indicative of its leading characteristic, the extraordinary weight of the average fruit. Solid flesh explains why Stone is so heavy. The small seed cavities; the fruits deeper through from stem to blossom end than most standard sorts and the superior quality of the flesh combine to make it the ideal late sort for many purposes in all sections having long enough seasons to mature a full crop. It is a safe estimate that more Stone tomatoes are grown throughout the country than of any other half dozen sorts combined. Largely used by canners too.

**Coreless.** Two characteristics put this variety in a class by itself. It will succeed admirably in shady places and the fruits are perfectly round. Fruits of Coreless will furnish five slices against three slices of a Stone tomato of same weight. No waste at stem or blossom-end, smooth skin and solid meat make Coreless tomatoes the delight of the housewife. In season about the same as Stone, in quality somewhat more acid than that old standard. It is an almost rank grower and should be pruned severely to do its best.



This solid type of flesh is economical. Coreless

**Dwarf Stone** is included in this collection for two reasons. It is the best "fixed" dwarf sort with fruits of good size and it is the ideal tomato for gardeners whose space is limited. By "fixed" is meant that the leading characteristics of plant and fruit invariably prove true to the ideal of the grower. Plants are of compact growth, not exceeding $3\frac{1}{2}$ feet in height on fair soil. They may be planted 24 inches apart in the row and will not crowd each other — at least the productiveness of the plant is not influenced by close planting. Dwarf Stone succeeds nearly everywhere in this country (where tomatoes are grown), and will set fruits under a high temperature which causes many other sorts to shed the blossoms. Heavy foliage and drouth resistance must be responsible for this characteristic. Skin, flesh and quality are beyond criticism.

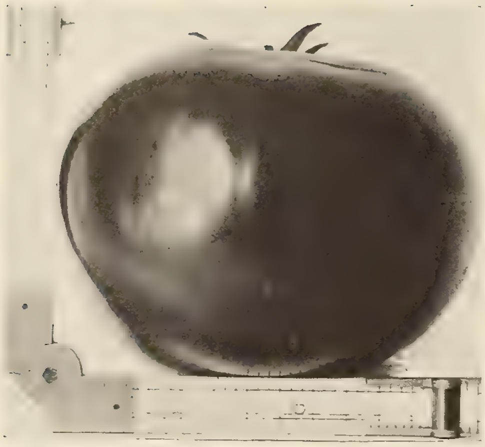
### THE FIVE PURPLE VARIETIES

**June Pink** is the purple brother to Spark's Earliana. It is, perhaps, a little deeper through from stem to blossom end, but otherwise the characteristics of these two are very similar. It rules the early markets where purple tomatoes are preferred, and has many followers who prefer its milder quality to the decidedly acid flavor of Spark's Earliana. Characteristics common to both these extra early sorts are the finely laciniated foliage and the open, spreading growth of plants. These, as much as any other reasons, are responsible, for the earliness of these two kinds. The sun has full and easy access to the fruits, which color evenly and quickly.

**Beauty** is the standard second early purple sort in all sections of the country. One of the handsomest tomatoes ever evolved, with fruits free of blemish and meat of superb, mild quality. It seems permissible to compare this with Chalk's Jewel among the scarlets. If there were only two tomatoes to which gardeners throughout the country were to be limited, I would advise that those two be Beauty and Chalk's Jewel. Beauty is always of good size, has a long season of bearing and yields handsomely. It is dependable under all circumstances and makes you wish that all tomatoes were Beauties.

**Globe** goes Beauty one better in just one instance. It is perfectly round and will furnish four slices against Beauty's three. In the short period of five years Globe has captured the Southern planters who grow it now almost exclusively for Northern markets. It is a safe estimate that 75 per cent. of all the tomatoes reaching us during the winter months are Globe. Reasons for this are plentiful. Globe plants are as nearly blight-proof as years of effort on the part of the breeder has been able to make a tomato plant. Fruits may be picked quite green (which is necessary for shipping) and will ripen up uniformly to reach the market in tip top condition for top notch prices. Skin and outer walls of fruit are firm and thick, so the fruits carry well and stand considerable handling without injury. The flesh is very solid and of mild, delicate flavor.

**Magnus** is absolutely unique in character of plant. Foliage is not cut like the ordinary tomato vine, but the leaves are solid, thick and bluish green. You always know a Magnus tomato plant after you once see it. Just why this does not have the general cultivation which it deserves, is a puzzle to me. In season almost like Beauty, it bears slightly larger fruits and just as many as any other good standard sort. For training to stakes,



Typical fruit of Stone. Greatest diameter in cross section

which is now so much in vogue, it is absolutely unsurpassed. Fruits are borne in clusters, are handsome, of good quality, with solid meat of fine flavor. Magnus is a great favorite with Southern planters because the heavy foliage resists insect attacks and protects blossoms and fruits from the scalding sun. However, it does equally well in other parts of the country and really deserves more attention. The plant shown in the illustration was trimmed of its foliage on one side to display the fruit.

Trucker's Favorite may be called the purple "Stone." While neither so large nor so heavy, it is the purple main crop tomato in many parts of the country, but especially in the East. Fruits are very attractive, always smooth, of good market size and have a quality which makes the man who uses them once, ask for more. Vines are thrifty and resist disease splendidly. Fruits are uniform in size, smooth; meat solid and of fine mild flavor.

### TRIAL CONDITIONS

In connection with the comparative schedule following, bear in mind that the *average* is considered in each and every instance. Every gardener knows that neither the first nor the last fruits a plant will bear are representative specimens of the variety tried. In order to get the correct *average* weight, two dozen fruits from the beginning to end of season were weighed in the case of each variety. The total weight divided by twelve furnished the average mentioned in table. The dates mentioned apply to central Ohio and territories of the same latitude. The plants producing the results given were uniformly twelve inches high when set into the garden. Space devoted to each plant was 2 x $2\frac{1}{2}$ ft. Clay soil enriched by a small shovelful of chicken manure per hill nourished the plants.

Typical fruit of Globe. Greatest diameter in long section

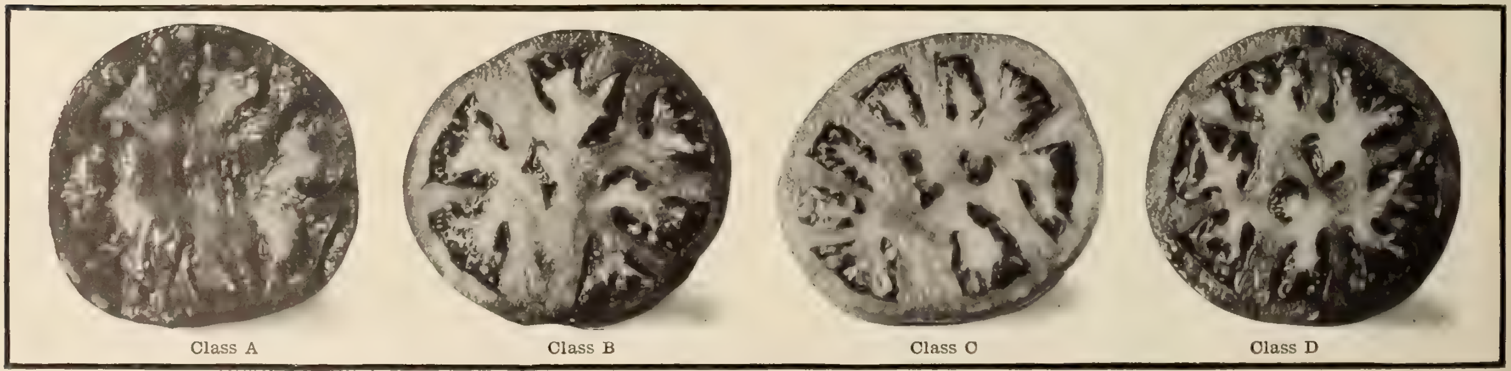
When $2\frac{1}{2}$ feet tall, the plants were thinned to three of the strongest branches and tied to 4 foot stakes with raffia. Every side shoot, superfluous branch or young plant starting between joints was conscientiously removed as the plants developed. Going over the plants once a week is sufficient to accomplish this. When plants were four feet tall, the tops were clipped. On an average, three clusters of three fruits each had set on each of the three branches. Not all developed to become fit for use. Some sorts showed more blossom end rot than others, a disease fostered by prolonged dry weather. Three dozen plants handled in this manner will furnish all the fruits a family of four will ordinarily use for daily meals and for canning.

More exact information on pruning will be found elsewhere in this issue.

## Relative Size, Earliness and Quality of Tomatoes

| Names of Sorts | Date Seeds Sown | Date Plants Set Out | First Fruit Ripened | Diameter (Inches) | | Weight of Average Fruit in Ounces | Solidity Class | Season of Bearing | Average Number Fruits per Plant | Remarks about Quality and Individual Characteristics |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Cross Section | Stalk to Blossom | | | | | |
| *Red or Scarlet* | | | | | | | | | | |
| Spark's Earliana | 4-1 | 5-25 | 7-12 | $2\frac{1}{2}$ | 2 | 6 | D | Short, 2 pickings | 15 | Decidedly acid. Inclined to be rough around stem end |
| Chalk's Early Jewel | 4-1 | 5-25 | 7-20 | $3\frac{1}{4}$ | $2\frac{1}{4}$ | 7 | B | Long, 4 pickings | 19 | Mild and excellent |
| Stone | 4-1 | 5-25 | 7-28 | $3\frac{3}{4}$ | $2\frac{1}{2}$ | $9\frac{3}{4}$ | A | Late, 3 pickings | 20 | Semi-acid. Sure cropper |
| Coreless | 4-1 | 5-25 | 8-5 | $3\frac{1}{4}$ | 3 | $9\frac{1}{2}$ | A | Late, 3 pickings | 15 | Acid. Nearly round. Fine slicer |
| Dwarf Stone | 4-1 | 5-25 | 7-25 | $2\frac{3}{4}$ | $2\frac{1}{4}$ | $6\frac{1}{4}$ | C | Late, 3 pickings | 12 | Semi-acid. Best "fixed" dwarf |
| *Pink or Purple* | | | | | | | | | | |
| June Pink | 4-1 | 5-25 | 7-10 | $2\frac{1}{2}$ | $2\frac{1}{4}$ | 6 | D | Short, 2 pickings | 15 | Mild and handsome |
| Beauty | 4-1 | 5-25 | 7-20 | 3 | $2\frac{1}{4}$ | 7 | B | Early, 3 pickings | 16 | Mild, fine slicer |
| Globe | 4-1 | 5-25 | 7-26 | 3 | $2\frac{3}{4}$ | $7\frac{1}{4}$ | A | Early, 4 pickings | 18 | Round, mild, blight resisting |
| Magnus | 4-1 | 5-25 | 8-4 | $3\frac{1}{2}$ | $2\frac{1}{2}$ | 7 | B | 3 pickings | 20 | Semi-acid, fine for tropics |
| Trucker's Favorite | 4-1 | 5-25 | 7-28 | 3 | $2\frac{1}{4}$ | $6\frac{1}{2}$ | B-C | Late, 3 pickings | 16 | Mild, handsome eastern market sort |

Note—Skin and color of flesh vary so greatly on different soils in one and the same locality that no attempt has been made to classify these characteristics.



Class A Class B Class C Class D

Showing the four grades of solidity as indicated in the above table

# Perennial Phloxes Worth Growing—By Elizabeth Herrick, Massachusetts

AN ATTEMPT TO HELP THE AMATEUR TO A BETTER UNDERSTANDING OF THE MERIT OF SOME OF THE MORE RECENT INTRODUCTIONS—PURE COLOR EFFECTS AND THEIR HARMONIES

THE great multiplicity of named varieties of perennial phlox is one great cause of most of us knowing so little about what are really the best varieties. The phlox impels attention because it is the most showy of our hardy perennials during its season (July to November), and it is so easy to grow that it may almost be said to thrive under neglect! It may be planted at almost any time of the year and old roots may be taken up and "divided," i. e., cut into pieces with the spade and reset to grow with greater vigor. I have tried to select the more desirable from this host and to help other amateurs to an easier task of selection for their own needs. The stereotyped catalogue description is dreadfully inadequate — there are usually just two words for word descriptions, the originator's and the introducer's — pinks masquerading as mauves, salmon-scarlets as pure orange, magentas as crimson, to the bewilderment of the purchaser and the general upset of the garden. Another cause of confusion is the fact that, even when catalogue descriptions of a variety tally, as they seldom do, the lay-understanding of color differs widely from that of the professional nurseryman and florist. In my collection, Selma and Gruppenkönigin, both listed, in most catalogues that I have seen, as delicate rose-mauve, prove an exquisite light pink. I am sorry to think how many possible purchasers of these beautiful varieties may have been frightened away by the fatal "mauve" of the color-terrorists. The gardener may, to be sure, rely upon some florist or nurseryman to send him what he ought to have; but florists and nurserymen are not, unhappily, always the artists their occupation would suggest them to be, and in nine cases out of ten the unfortunate buyer by proxy will get just what he oughtn't to have. The best way to select varieties for your garden is to visit a good nursery, but often there is no local nursery, or, when there is, it carries only a few of the older varieties. So, in the end, the beginner is driven back to the catalogue.

Coquelicot is a bright scarlet phlox. Its flowers however are rather small

### HOW TO SELECT

The first step in selection is to consider carefully the projected location of the phloxes. If in a new garden, there is wider scope of choice, as one does not have to avoid color-clashes with other plants; if in a border already started, be careful to select only those colors that will harmonize with what August-to-November-blooming perennials are already possessed.

The best of the early blooming phloxes is the white Miss Lingard, happy in any color combination.

If the grounds are extensive enough to permit, a very pretty and satisfactory arrangement of phloxes is to alternate groups of two or three of a color with clumps of delphiniums and the white plume poppy (*Bocconia cordata*), in the background of a wide herbaceous border. The grouping of white and blue at intervals between the more brilliant and daring shades of the phloxes contributes to a harmonious blending of colors that side by side would be inadmissible. Even with this arrangement the pinks and reds should be separated as widely as possible and the salmon-scarlets and orange-scarlets contrasted with the pure whites.

Of the whites, the largest-flowered varieties to date, are Von Lassburg, medium tall (2-2½ ft.), and rather late, Frau Antoine Buchner and Helena Vacaresco, dwarf (under 2 ft.). Probably the best tall (3 ft.) white is Mrs. Jenkins, with immense panicles of good-sized blooms; Purity and the late Jeanne d'Arc are older but excellent. A deservedly popular white and by many reckoned the best white phlox in existence, is the already mentioned suffructicosa Miss Lingard, which kindly begins flowering in June, fully a month earlier than the decussata phloxes and gives of itself again generously in September. Miss Lingard has a second point of superiority in its foliage of dark, glossy green, happily immune from attacks of the red spider.

Of the salmon-scarlet phloxes, General Von Heutz and Athis, the latter the tallest growing phlox except the new Goliath, are the most desirable. A phlox sold as Brilliant and described as blood-red, proved, with me, to belong to this color-class. It is of medium height, with very large individual flowers, having, however, a trifle more orange in composition than either of the others. The effect is undeniably "brilliant."

The best bright scarlet is the tall-growing and immense-flowered Geo. H. Strohlein, an improvement on the popular Coquelicot, of the same color but of poorer habit and small-flowered. Baron Van Dedem, a new red, and Vesuvius are similar in shade to Coquelicot but have larger trusses and individual flowers.

Of the so-called crimsons, the handsomest is Comte Von Hochberg. Another good crimson, though described as "ruby-red," is Captain Wilhelmy, a very bright and pleasing phlox, though small-flowered. Champs Elysées and Rosenberg, although usually classed as crimson, have a decided carmine-magenta tinge. Rosenberg, however, is a truly magnificent variety, having immense flowers and really symmetrical form.

The best pale pink phlox that I have grown is the variety catalogued as Beranger and described very briefly as "white, suffused pink, crimson eye," an accurate description enough, so far as it goes, but it doesn't go far enough. In my garden this phlox has proved itself worthy of more enthusiastic notice. On first opening the blossoms appear, in warm weather, to be nearly white, but gradually suffuse until the whole flower is the most exquisite

*P. suffructicosa*, var. Miss Lingard flowers generously from June to September. It has white flowers

Clumps of white perennial phlox will give a welcome effect of lightness and coolness in the summer garden

apple-blossom pink with a rayed white halo and crimson centre. Except Rosenberg, Frau Antoine Buchner, and Eclaireur, Beranger has the largest individual flowers of any phlox that I have seen, though in no catalogue have I found this phenomenal size noted. Madame Paul Dutrie comes very close to Beranger in color; it is not, however, quite so clear a pink, showing a faint lilac hue These two phloxes associate charmingly.

Of light pinks there are several from which choice may be made, Selma and Gruppenkönigin being among the best. L'Evenement, a delicate pink tinted salmon, and Pink Beauty are also desirable. A very fine light salmon pink is the new large-flowered Elizabeth Campbell, first offered in this country, I believe, two years ago.

For those who prefer brighter shades the pink varieties, Sunset, Ornament, the beautiful new Rjinstrom, with blossoms larger, to borrow catalogue phraseology, "than a silver dollar," and the Van der Schoot hybrids, Millet and Amos Perry, will be sure to appeal.

From pink to rose is only a step in color gradation, and in this class are to be found some of the showiest of all phloxes. Crepuscule, a large-flowered rose with crimson centre is a remarkably beautiful phlox. Fully as striking is the variety Paul Martin with its blending of rose and fiery gold. Not so dazzling but equally beautiful is Pantheon, closer to a true old rose than to the carmine-rose, cerise and salmon respectively of catalogue parlance. Another soft old rose, with a white eye, is Caran d'Ache, described, unfortunately, as geranium-red with old rose shadings. No one, however, who grows this variety will be disappointed in its beauty. A new variety, Jules Breton, is said to be "golden rose, with a centre of pale rose-lilac," a most alluring description, as to the accuracy of which I am unable to bear witness, for Jules Breton is one of my future (and, I hope, near future) dreams.

So many phloxes have been described and sold as blue, to the great weakening of one's faith in the veracity of the human race, that the amateur needs to tread warily. I have tried many of the "blues" offered, but have not found any of them really blue, except Le Mahdi, which is nearly the blue of an English violet — with the all-important proviso, *if the flower is in the shade!* In early evening, also, Le Mahdi exhibits the same phenomenal hue. When the sun strikes the blossoms, though they still show a bluish tint, the predominant color is a carmine-crimson. Iris, listed as blue-violet and described, in one foreign catalogue that I have seen, as the best of all phloxes of this shade, proved itself, in my garden, at least, a truly magnificent deep, velvety violet-crimson, with the crimson predominating. Javanaise and Merlin, both Lemoine hybrids, show a purplish blue tint.

Of the purples, Gypsy and King of the Purples are noteworthy. Many of the crimsons border on purple; a pure deep crimson seeming, in phloxes, a difficult shade to attain.

Some of the foreign trade lists catalogue the "wine-reds," Franklin and La Nuit, and I find one American retail catalogue offering Mont Rose, but, instead of a "dark wine-red," Mont Rose opened, to my disappointment, a beautiful deep rose. In size of bloom and habit of growth, however, Mont Rose is notable. It appears to be one of the most generally admired phloxes in my garden.

Carmines and "rosy magentas" are difficult shades to harmonize even in the most careful grouping, but if such colors could be properly isolated from all others except white and certain shades of lavender, there are phloxes of these dangerous colors. possessed of great individual beauty. One of the finest of these is Eclaireur, probably (if we except Rosenberg) the largest-flowered phlox existent — a rich crimson-carmine with a large rosy-white, sometimes pure white star. Edmond Bossier, with a little more of the crimson than of the carmine in its shading, and a very large white centre, is also desirable. Obergartner Wittig, a rosy-magenta with white centre and carmine eye, is deservedly called one of the "very best phloxes," but, owing to its peculiar shade, a bit difficult to handle artistically. I have found that it associates rather pleasantly with a deep lilac-rose and a very pale rose containing a hint of mauve. The three shades afford a really charming color gradation, allowing this truly beautiful phlox to appear at its best. A missing label resulted in the chance placing of a single plant of Obergartner Wittig between Eclaireur and the pale flesh (almost salmon) pink Gruppenkönigin! Yet at its worst Obergartner Wittig was not half so bad as it sounds.

There seems just now to be a strong interest in variegated and ringed types, also clear whites with a contrasting centre, usually carmine or crimson, though violet, lilac-blue and rose-pink centres are also seen. These phloxes are brilliantly showy and many of them exceedingly beautiful.

Of the white varieties with crimson centre, Belle Alliance, Richard Wallace and Aglae Adanson are excellent, but by far the best is the striking Henry Murger, whose immense white flowers have an exceptionally large red centre. A white phlox with a violet eye and a faint shading of porcelain blue is Distinction, rare but rather insignificant, though the decided bluish tint of the buds somewhat relieves the washed-out appearance of the flowers. A smaller-flowered variety of the same general description, but with deeper flushing and buds, is Wonder. Emerald, a manifest misnomer, from the same source, is by no means green or even, like Rheingau, green-eyed, but a beautiful French-white with purple eye and deep lavender buds.

One of the prettiest rose-centred phloxes is Josephine Gerbereaux, the rose centre of unusual size toning exquisitely into the white. A variegated variety of charming coloring, De Mirbel, has the white ground color flushed and streaked with a copper-rose.

The hybridizers, doubtless in their efforts to produce a true blue phlox, have been very busy of late with the lavenders. Consequently we have in this color some of the most beautiful phloxes. Nearly every gardener knows Eugene Danzanvilliers, but a variety equally as handsome and quite as large-flowered, Esclamonde, appears to have escaped general notice. A warm lavender flushed with rose and a rose-violet centre encircled by a large white halo, distinguish this charming variety. A plant of fine form, sturdy growth and beautiful coloring, it deserves more attention that it has so far received.

Antonin Mercie, a pure lavender with white halo, possesses such slight points of difference from Eugene Danzanvilliers that, planted side by side in my garden, the average visitor fails to distinguish between them. Grace, shows a light lilac ground, heavily marbled, and a white centre. The new introduction Wanadis, recalls this variety, but is, I should judge, superior to it in habit and size of flower. It is further distinguished by a deep reddish-purple eye.

A light lilac phlox shading to a white edge is Chateaubriand. Daniel Leseur is a better variety of deeper coloring and more distinct border. Duqueslin, reddish-violet, also has a white border. Unique among lavender-lilac phloxes is Cross of Honor, a pretty rose-lilac of medium size, the white border of the petals defining a Maltese cross.

Gray shades, though frequently catalogued, are not desirable. Neither are the whites with sulphur eye. A phlox in my garden showed a curious color-variation in one half of its growth. As I find nothing like it catalogued, it seems worthy of mention. The normal color of this phlox is deep rose with crimson shadings and red eye. The trusses that, if one may so employ the term, sported, showed flowers with white eye surrounded by a clear medium-light blue halo and a narrow crimson-rose border. The halo appeared nearly the shade of a blue platycodon but in very few of the flowers was the circle symmetrical, on some petals the blue flaring almost to the outer edges, on others scarcely appearing. The flowers opening last showed a more perfect, though slightly contracted halo, which would seem to indicate that the plant is overcoming the tendency to revert to type and that eventually the "blue blood" of this little hybrid will tell. As a rule, phloxes exhibiting color irregularities are not beautiful or desirable, except to the hybridizer, though many such are listed as high-priced novelties. They seem to me, frankly, like premature introductions of unfixed types, curious, but unbeautiful, and without real value to the amateur. In phloxes, as in most other flowers, the pure self-colors are at once the most effective and the most artistic.

The perennial phlox in its many varieties is a one stand-by for flower in summer time, and can be used in many combinations, but be sure to have a definite color scheme to plant by

# The Yews in Elizabeth Haddon's Garden — By Wilhelm Miller, New York

IS NOT this the largest yew tree in America?" wrote Samuel N. Rhoads, an antiquarian of Haddonfield, when he sent a copy of the picture on this page to Professor Charles Sprague Sargent, Director of the Arnold Arboretum. "It is about thirty feet high, has a spread of seventy feet, and the trunk is over four feet in diameter."

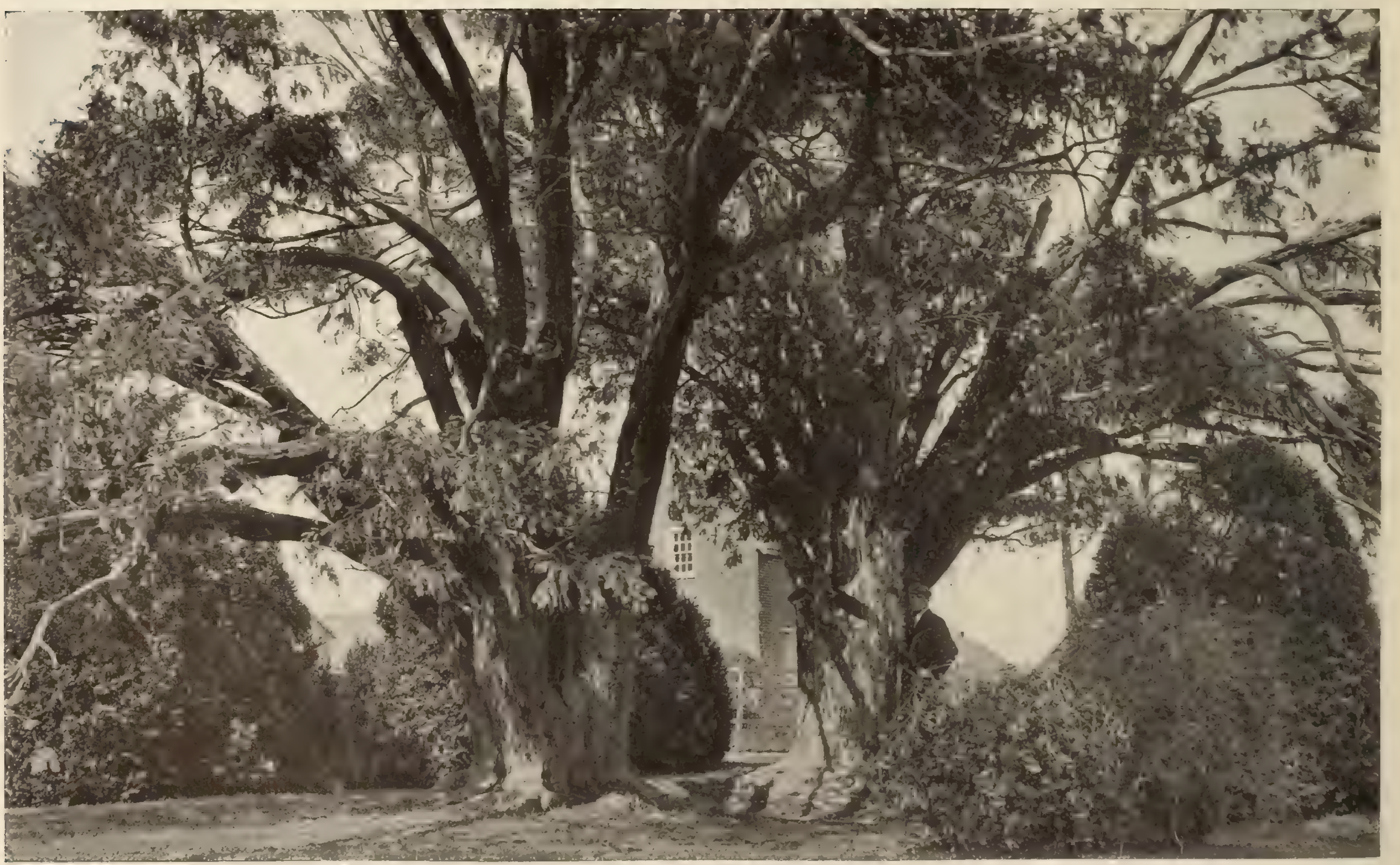
As a hater of the ephemeral style of American gardening, which takes no thought of succeeding generations, and as a lover of 4,000-year-old yews, such as they have in England, I determined to see this noble evergreen tree, which had survived the wars, fires and neglect of two centuries, and find out why some enterprising real estate dealer had not cut it down and replaced it by a Lombardy poplar guaranteed to last ten years. I tracked Mr. Rhoads to his lair, in a thick city atmosphere of old books on natural history and gardening and dragged my new-found friend into the garish light of Market Street, Philadelphia, whence we took the ferry to New Jersey, and a train which brought us in less than half an hour to the suburban community known as Haddonfield, N. J.

Even from the station we could glimpse the fine old country place known as "Haddon Hall of Haddonfield, N. J.," which stands aloof in mute but dignified protest against the wilderness of "suburban homes" rising on every side, with all their atrocious but typical features, e. g., tinder-box construction, bad proportion, etc.

Turning our back on these "improvements," we took the road to yesterday and soon saw looming ahead of us a dignified old brick mansion framed by ancient trees which command the entire landscape by reason of the gentle eminence (about ten feet) on which the house stands. By contrast with a typical American suburb, the house seems all that can be desired for permanence, style, and proportion; and it certainly nestles beautifully among the venerable native trees which surround it, instead of standing out in sharp contrast, like a modern house that is surrounded by showy cut-leaved, weeping, and variegated foreign trees. A second look, however, indicated that the house is of a city, rather than a country type, since it recalls the characteristic Philadelphia brick house of red brick with marble trimmings. It is no wonder that the Londoner feels at home in Philadelphia, for he has seen this type of house before, and when the Philadelphian goes to London he feels at home, too, because he finds around Russell Square houses that are reminiscent of his own Independence Hall. But in 1842, when the present house was built, Americans knew no better than to build city houses in the country, as cockneys do to-day. And Downing was just lifting his voice in favor of any style of architecture which blends with a rural landscape, and is genuinely adapted to country conditions of labor, life and customs.

The present Haddon Hall marks the site of the second house built by the original Elizabeth Haddon in 1713, when, as the wife of John Estaugh, she became mistress of the most famous centre of hospitality in the southern part of New Jersey. Her original home was a pioneer dwelling a mile away to which she came in 1700 about the time of William Penn's second visit to America. Her nerve has been the wonder and delight of every succeeding generation, for she answered the unmistakable inward voice of the Quaker by leaving the comfortable home of a prosperous London anchorsmith, crossed the ocean "alone" (for she had only two servants with her), and settled in this forest wilderness. Her collateral descendants through her sister's marriage now form a respectable army of devoted admirers.

There is no way of hinting at her ro-



European yews 200 years old at Haddonfield, N. J. They were brought from England by Elizabeth Haddon, the "maiden pioneer" of the Quakers, in 1700. The trained box bushes are about 10 x 10 ft. The yew on the left may be the largest in America mantic courtship without spoiling the tale, which has been told for all time by Longfellow in the poem called "Elizabeth" which you will find in the "Tales of a Wayside Inn," Part Third. But even I, who have but a spark of poetry, was moved to get down my Sunday School edition and read the exquisite story, which has warmed every ossified heart on which I have since tried it.

Most Colonial gardens are melancholy wrecks, but Elizabeth Haddon's garden is a joy. There is no trouble in recreating the eighteenth century atmosphere. The garden is a rectangle of about an acre which was bounded on two sides by the old house and a vanished terrace, and is still bounded on the other two sides by a brick wall of a beauty which pierces to one's marrow. It is about four feet high and is capped with wood so that brick wall harmonizes with brick house and wooden cap, with wooden roof, and the whole makes a transition from architecture to nature. The long wooden boards are securely fastened to short beams, about 4 x 4 x 18 in. laid at intervals of four feet in the top of the wall. If I read the story rightly, there was no need of an 8-foot wall in 1713, for there was privacy enough in the wilderness. Presumably the function of a wall was to keep cows out of the flower beds, but it also satisfied the Englishman's instinct to warn the universe that his home is his castle. Of similar construction is the adjacent brew house, the only building of Elizabeth Estaugh's which has survived. The view over the wall is doubtless similar to the one Elizabeth enjoyed, for her house was surrounded by cultivated fields — the only break in the forest which stretched everywhere as far as the eye could see. To-day, of course, the woods are not so fine, and the view will be ruined unless some one with a soul rescues the whole tract.

It is impossible to escape the magic of the past, for the old boxwood trees in the garden "breathe the fragrance of eternity." Eleven of these stately evergreens line the terrace walk and the path which penetrates the heart of the garden. On one side of the terrace are the tallest specimens — three trees about twenty-two to twenty-four feet high. Along the central walk the boxwoods have been trimmed to rounded bushes about 10 x 10 ft. These are almost, if not quite, flawless, and the lower branches have taken root in an interesting manner.

But the real heroes of the garden are the old yews. They are waiting for you just where you would expect to find them, at the old trysting place. They brood over the centre of the garden, like Philemon and Baucis, and are stationed on either side of the main walk. Another picture shows this path leading straight to the big house past the trained box bushes and emphasizes the grandeur of the picturesque yew trunks. Mr. Rhoads' picture, here reproduced, shows the old brew house and gives some notion of the feathery foliage of the yew trees, which have a flat spray of short needles, like that of hemlock. Unfortunately, both trees were badly hurt by the continental ice storm a few years ago, and it is doubtful whether they will survive another century.

There is a third yew which is harder to explain, for it lacks a mate. It stands in front of the house, as if designed to help frame the home picture, and the mind demands another yew to balance it on the other side of the walk which leads to the front door. Whether there was a yew there originally who can tell? A tall deciduous tree is now on the spot. This odd yew has a trunk about three feet in diameter, seems twenty-three to twenty-five feet high, and has a spread of seventeen paces — about fifty feet.

The flowers have long since disappeared from Elizabeth Haddon's garden, but the charm remains. Some day, let us hope, the small fruits and quaint old simples that must have been there two hundred years ago will be restored. Such a garden ought to be preserved.

# Hardy Shrubs for the Northwest—By C. L. Meller, North Dakota

A FEW WELL KNOWN SHRUBS OF THE EAST THAT ARE QUITE AT HOME IN THE EXTREME COLD AND ALSO SOME WORTHY NATIVE MATERIAL THAT SHOULD BE USED IN MAKING GROUPS IN THIS REGION

HORTICULTURALLY, the Northwest is little beyond the pioneer stage, while in the matter of landscape gardening it is still in its infancy with school days yet ahead. The climate of this region, rigorous in its extremes, but healthy, is so unlike that of any other section of the Union or even of foreign parts that experience can be the only teacher and out of this inevitable experimenting, results will come that even the East may copy with profit. In the matter of shrubs, already the indications are that the Northwest will develop some material which the entire country may ultimately demand in producing certain effects. It is the winter winds, with late spring and early autumn frosts that limit the gardener of the Northwest in what he can grow.

Though the golden bell is hardy, the winter invariably kills the flower buds; and, lacking its springtime joy, the shrub serves no purpose. To take its place as an early spring bloomer, we have the native gooseberry with its greenish white flowers, whose charm consists in their suggestiveness of a humming bird on the wing, rather than in any marked beauty they possess. Hardy and unmindful of neglect, this gooseberry will thrive in poor soil and deep shade. Nothing transplants more readily and a mature bush may be divided into as many plants as there are canes, provided a bit of root be taken with each cane.

Springtime color play that can be achieved as readily in the Northwest as in the East is that produced by the white of Van Houtte's spirea contrasted with the pink of the Tartarian honeysuckle when the former fronts the latter. It is a delicate combination, the pink among the green above the pronounced bank of white.

Extravagant as is the wording of the average nursery catalogue, I can recall no instance where the description of this particular spirea exceeds its merits. The severest winters, the driest summers and the strongest winds seldom injure it. The clean and ever healthy foliage assumes in fall a bronze that adds distinctly to the color scheme of autumn. Due to its abundant, compact, and fibrous roots, it transplants as readily in July and August as in spring and fall. Though in such locations somewhat slow of growth and about a week later in bloom, it will nevertheless thrive to the north of a wall where but little sunlight reaches it.

The Tartarian honeysuckle is second to none in hardihood and delicacy of bloom. It takes about a year or two for this shrub to get a good roothold on the soil but thereafter its permanency is assured. Its outline is somewhat peculiar among shrubs, rising from a narrow base to a broad rounded top. The translucent, red berry ripens early and adds its color value in early summer but unhappily drops before fall. Both the spirea and the honeysuckle can be used separately as specimen shrubs, but are prettiest in combination.

Of lilacs we have an abundance and can carry their bloom into June. Nowhere does the common lilac thrive better than on the fat clays of the prairies. It is an effective screen for through its compact foliage no light can penetrate. With this, we can contrast the lighter and more delicate foliage of the Rouen lilac which is equally as hardy and fully as abundant in its bloom but much more refined in general appearance. This shrub is often wrongly called the Persian lilac; the true Persian lilac is altogether unreliable in the Northwest. No small advantage of the common lilac is its ability to withstand frosts, remaining green during our delightful Indian summers when all the trees are bare and most of the shrubs stand naked. The Chinese lilac, which is hardy and blooms fully a month later than the others, can well be used to extend the season into June.

The snowball thrives, it would appear,

The shrubby native roses and *Rosa rugosa* are excellent for low hedges and have fruiting quality too

Van Houtte's spirea makes a bank of pure white that is a welcome feature in summer

even better in the West than in the East; it is more profuse of bloom, and decidedly freer from insect attacks, though in nowise immune. It cannot be relied upon to bloom every year, but during a favorable season it is a bank of white, relieved just enough by the green of its foliage. It carries, as it were, the virgin white of the spirea farther into the season.

As an indicator of the soil moisture, the Philadelphus or mock orange, perfectly hardy, can be made to serve a rather unique purpose in the shrubbery group, for with a lack of moisture its leaves droop. With an abundance of moisture, a mock orange is a vigorous grower and a free bloomer, with its period of bloom, however, all too short, a week! Some of the varieties whose orange-like blossoms emit a pleasing odor are of value in adding fragrance to the garden. There are some pretty drawfs among the mock oranges, while the tall forms often exceed ten feet. They carry their foliage well down to the ground, which together with their height and narrow growth fits them for screen planting, as also for the shrubbery group into which they bring height and background. In outline, they are not very regular as twigs are apt to thrust themselves out from the main body of foliage almost anywhere.

In the elders we have just the material wherewith to fill odd corners and to bring variety into large shrubbery groups. As specimen shrubs their sprawling habit is against them, but when used in masses they are rather effective. The common elder with its flat, broad clusters of flowers had best be used sparingly.

The spireas Bumulda and Anthony Waterer are perfectly hardy all over the Northwest; but for summer bloom we have a native spirea that outclasses these rigid and coarse colored plebeians. Along the prairie roadsides may be seen blooming during July and August a willow leaved spirea which in a way is certain to prove a disappointment for its airy white spikes of bloom promise a fragrance that is sadly lacking and sorely missed. This spirea is taller in growth than Bumulda though a low grower nevertheless. When used in masses against a taller background it will bring sheets of feathery white into the landscape just before the golden rod and the asters start into bloom.

The common dogwood behaves most peculiarly out here. The manuals have it as a spring bloomer, but not so with us. Here it is intermittent, with green and ripened fruit, buds and full blown blossoms on one and the same shrub in August. Though its small clusters of flowers are not very conspicuous, still they refuse to be altogether neglected.

Some of the fruiting shrubs leave little need for summer bloomers. Almost as pretty in its bloom as the snowball, the highbush cranberry has a longer period of decorative value. As its abundant clusters of berries ripen, changing in early summer from green through yellow into a warm red, their beauty is somewhat akin to the budding and blooming of a rose. It is a tall shrub and holds its berries high among its foliage. In winter they outline themselves against the clear blue sky — one must ever look up to see the berries. It will thrive in any soil short of pure sand or clay. No wind or winter harms it.

In the native rose we have another shrub that in its effect is as good as a summer bloomer and moreover compensates for the common and Thunberg's barberry neither of which fruits with us, the latter being moreover unreliable in vigor. The pendant hips are borne in abundance and ripen in late July and early August. The healthy and pretty foliage adds its bronze to the scale of autumn tints, while the hips which persist into spring, fairly glow against the glittering snows of winter. There is hardly any soil in which this rose will not grow nor extreme of temperature it will not endure. It is splendid on a hillside where its suckering habits help it hold the soil against washing.

When once the beauty of its small sessile and glowing red berries standing out against the gray foliage become better known, our native buffalo berry will be a far famed shrub. There is none other that produces quite the same effect. It is hardy, healthy and indifferent as to soil. What need of a summer bloomer where the glowing red and the distinctive gray of the buffalo berry fairly sparkle in the August sun? It is a desirable addition to the color scheme of any shrubbery group and moreover its gray is of such a shade that it can be used in heavy masses without tiring the eye. Its flowers are a negligible quantity. The bare gray twigs warm the snows of winter. It is a pliable material, growing ten and even fifteen feet high, it can yet be held within three or four feet by severe pruning and when so pruned, its twigs interlace to such an extent as to present an almost solid mass to the eye. It must be borne in mind however, when planting this shrub for the beauty of its fruit, that it is dioecious. One staminate shrub is enough for a large group.

The hawthorns flourish in the Northwest and their miniature apple-like fruits standing out against the clean glossy foliage add to the joy of autumn, especially where the shrubs growing fully ten feet tall are massed along a road or drive. It also is a shrub that does away with the need of late summer bloomers for in early August its berries begin to ripen. Its rather large white flowers against the dark green foliage are no small addition to the bloom of spring. The foliage never entirely hides the smooth glossy twigs. They are not as easily transplanted as might be, but with care the loss need be very small. They are, however, unquestionably hardy.

The sumac furnishes the brightest blaze of autumn color. The smooth and the staghorn kinds are equally hardy. They will grow in almost pure clay. They start readily and though shallow rooted will live through a summer without a drop of rain, nor does excessive moisture appear

The red buffalo berry fairly sparkles in the August sun. Foliage gray-green

to harm them. The sumacs' suckering habit enables them to spread and brings the foliage down to the ground. They are shrubs that demand plenty of elbow room which renders them rather difficult for the small mixed border, whereas alone or in a large group this habit is a distinct help. Their large foliage, at all times decorative, is at its best in autumn.

Of shrubs with colored foliage, the Northwest has almost as wide a selection as the East. Indeed in the buffalo berry already referred to we achieve a gray which the East cannot quite duplicate, only approach by the use of the Russian olive which is also hardy in the Northwest. There is a touch of silver that we can bring into the foliage of our shrubbery groups by the use of a native known as silver leaf or badger bush and to botanists as *Elæagnus argentea.* It will grow anywhere and everywhere. Its bloom, though inconspicuous, adds a brief week of fragrance to the garden. Because of its persistent suckering (which if not attended to will make it too numerous among other shrubs) and also because of its color, it cannot be used too promiscuously. An artistically placed clump of silver leaf will brighten a dark spot.

The Siberian pea-tree, though hardy, can scarcely be regarded as absolutely reliable as it is apt to fail in whole or in part for no apparent reason. With the velvet gray of its new foliage and its pea-like blossom, it is, however, a pleasant addition to the color scheme of any planting. Resisting drought but indifferently, it is not to be recommended for the drier parts of the prairies. The purple barberry is hardy and affords us really the only dark leafed shrub we have. Used in hedgerows it is hardly as out of place as its color might lead one to believe. This, (as also the other barberries) fruits so sparsely as to make it in this respect a minus quantity.

The Tartarian honeysuckle makes a striking specimen shrub because of its inverted appearance

One of the best golden leafed plants is the golden elder. Though many a winter the bush dies down to the ground still it grows so vigorously each spring that by the beginning of July such a shrub is from four to six feet high. It blooms during the first week of July but seldom fruits. It will enliven a shrubbery group as nothing else can, though the temptation is to use it too freely. Also we have a dwarf philadelphus, seldom growing over four feet which with its fragrant bloom serves a twofold purpose. This shrub loses its golden color in partial shade.

In a manner every species of shrub has a distinctive foliage, though, while some depend on their bloom or their fruit for their attractiveness, the ornamental value of others is contained primarily in the outline of their leaves. Of this type are the following:

The cut-leaf elder is hardy, and more airy and graceful than the rest of the tribe. It brings an air of sprightliness into a group.

Tamarix is perfectly hardy in its roots though the canes die back almost to the ground every winter, making, however, a fair growth every year. It adds a distinctive charm and brings character into a group for the feathery grace of its foliage contrasts effectively with almost every foliage. Against a background of sumac it stands out well, while somehow less effectively though not without beauty, it outlines itself against the leaves of the native rose. Planting this material by itself is not to be advised. Tamarix requires winter protection and is rather late to start out in spring. The cut-leaf sumac with its fern-like foliage is very effective and though lacking the rugged vigor of the smooth and the staghorn varieties will nevertheless thrive when once established which, however, may be a matter of several trials.

An added quality of the native rose is the persistent fruits in winter

Prickly ash, the Hercules' club of the East (*Aralia spinosa*) which in its leaf resembles that of the mountain ash can be planted both for the peculiarity of its foliage as also for its small bright red aromatic berries which are an autumn joy.

Though not a shrub, strictly speaking, the choke cherry — which can readily be grown in shrub form—should receive a place in the large shrubbery group because of its summer fragrance and dark lustrous fruit. Though scarcely desirable as shrubs, some of the willows can be used to achieve varying effects. For instance: the laurel leafed willow varies the green of a shrubbery group in a most pleasing manner. The osier willow droops and plays in the slightest breeze in a manner impossible for any other shrub to imitate. The Russian golden willow with its pronounced yellow twigs brings into the winter and early spring landscape an almost obtrusive yellow that can be very easily overdone.

Thus the West which even now lacks not material for landscape effects will sooner or later develop its own material for its own distinctive needs.

# The Irises In Our Small Garden—By Florence Spring, Massachusetts

BEING AN INTRODUCTION TO THE GREAT CHARMS OF THIS RICH FAMILY WHICH CAN BE SO EASILY ACCOMMODATED IN VERY LITTLE SPACE—OBSERVE THE FLOWERS NOW AND PLACE YOUR ORDER FOR ROOTS

By far the most real in their summer beauty. the Japanese irises are worth any little extra trouble

WE MAKE rather a specialty of iris in our garden, and our success with the family, and the pleasure which its stately beauty, rainbow-like colors, and queenly habit of growth, gives to us and our friends, tempts me to urge those who have not yet made the intimate acquaintance of its various members to start some roots this coming fall or spring. I know of no other plant which will so richly reward the flower-lover, while requiring comparatively little care and trouble. You can look at the different varieties as they flower this season, and selecting what you like best, plant the roots in September. All nurseries have some irises, and a few specialize.

The finest blooms are obtained from old roots. Therefore, for the time-restricted amateur, whose duties are many, irises offer a great advantage over those plants which require, for their best well-being, dividing and moving into new quarters at longer or shorter intervals. It has always depressed me to read the cheerful directions in the flower books as to "moving and dividing all perennials every few years"; "all borders should be dug over, old soil taken out, and replaced with new loam and manure often"; "Phloxes, asters, and all hardy plants *must* be divided and reset," etc., etc.

I have a guilty feeling when I look at my one perennial border, and secretly reflect how *many* years it is since its "old inhabitants" have been deposed, and their places filled with ambitious and active young aspirants for our favor. True the dear old "border" still delights us with its flowery luxuriance, and also true, that we are often while digging and delving in the brown earth at its roots, interrupted by some person who wants to ask the name of our gorgeous mass of Coquelicot phlox, which we have cannily placed at the very end — near the street — to be beheld of all beholders; or to beg for a root of our beautiful Madame Chereau, most aristocratic of all the irises — but in spite of these things we know it is all wrong, and each season resolve to start our border afresh "next year!"

One of the early spring flowers is the baby iris, *I. pumila*

It is therefore a comfort to reflect upon one large family which even the autocratic flower books say "should remain undisturbed," and, planted with some thought and care in the beginning, it may be one of the stand-bys of the garden, permanent in position, and each year increasing in beauty and luxuriance.

Iris has the additional advantage, by means of its many species and varieties, early and late, of affording a long blooming season, and with a little careful planning, one may have iris of some sort in bloom for many weeks, although the flowering time of each particular species is short.

As I am writing for the large class of readers who, like myself, have very limited garden space, I would say that for such, one of the best and most satisfactory ways of utilizing the room which can be allowed the iris, is to plant a row of mixed colors, mostly flowering about the same time, but having a few varieties spaced regularly that flower earlier or later, thus extending the blooming time.

If expense has to be considered, plant a few roots a yard or so apart, filling in the first year or two with annuals, which can be replaced with more iris roots when obtained. I think it adds greatly to the pleasure of such a border, to collect varieties gradually. Let this row be of German iris — the common bearded — the true "Fleur de luce." It blossoms the latter part of May, and early June; is about two feet in height, and produces a great abundance of showy, beautiful flowers, of every color imaginable. Do not make the mistake which we did at first, of setting the row too near the front edge of the garden. It grows shabby after blossoming is over, and needs to be hidden by some friendly screen. We now have beds of low perennials and annuals in front of it, which do not interfere with its beauty in blooming time, but later grow tall enough to screen the yellow and drooping flags. Give it plenty of room, for it widens from year to year, and fertilize generously in the fall, covering it with stable manure which must be raked off in the spring.

Oriental iris, which comes just after the German iris in late June

If one has plenty of room, these rows may be multiplied as borders. The single colors massed in this way are enchanting.

I was once driving out into the country, and came upon a rather neglected looking old place, whose sole ornament was two magnificent borders of a pale cream-yellow iris, in full bloom, leading from the entrance gate to the front door. It had evidently had no particular care, but the location — rather low and moist — had suited it, and it had flourished gorgeously. I have always remembered its beauty. I afterward obtained a root or two, and have now a great quantity of it in my own garden.

As the iris flowers most luxuriantly, the blossoms may be cut quite freely, without interfering with the beautiful show, and there is nothing more effective for house decoration than a tall glass vase holding a few choice sprays, set among their own green flags.

The old-fashioned purple Asiatica and white Florentina varieties, bloom first of all, and to my mind, no rarer ones are more beautiful. The white has very large pearl-white, showy flowers, with the falling petals slightly tinged with lavender. It does well in even poor soil, so "fans" of this may be set in any corner among the perennials, colonizing them, as it were. The two or three spikes of perfect bloom which these single plants afford, are most effective.

Other varieties for the mixed row of German iris are Madame Chereau, most exquisite of these irises, pure white, with edges of the falling leaves delicately pencilled with sky blue; Queen of May, a beautiful lavender pink; Pallida Dalmatica, also a lovely lavender; King Edward, light blue; and the aforementioned *I. flavescens*, a very free bloomer.

To these plain colors should be added some of the many orchid-like varieties of striped and pencilled bronze, heliotrope, browns and yellows to give variety and contrast: Darius (canary yellow, the falling petals white striped with crimson), L'Esperance (bronze, falling petals yellow with crimson veins), Innocenza (ivory white, gold crest and maroon and white falls) are all good.

We also set single clumps of iris in our perennial border, to supply it with early bloom: the pale blue ones, with the old-fashioned yellow day lilies, are an enchanting combination; we also pick them together for the house, and the tall glass vase which holds them is kept filled throughout the season. The buds of both open in water, so we are economical, if our supply is limited.

All of these above mentioned varieties of German iris should be set about four inches deep, and protected in winter by a mulch.

*Iris laevigata* (or *I. Kaempferi* of the catalogues) is remarkable for the immense flat flowers in July

An interesting, although somewhat discouraging thing about the iris border, is the harbor it affords for all sorts of floating seeds and wandering roots. All kinds of travelers are constantly appearing in my borders — poppies, rudbeckias, New England asters, etc. I always dislike to pull them up — but it must be done, or in the race for the survival of — not the fittest — but the strongest, some rare iris may be choked. The insidious witch grass also "lies low" and sends up innocent looking tiny blades, which if not watched for with a lynx eye, will finally gain the victory. We were obliged last year to take up and reset a long border, through carelessness in this respect.

Like many of our garden and wild flowers, the blossoms of the iris require bees for cross-fertilization, and a part of the charm of the beautiful rows or masses of German iris is the variety of insect life attracted by them. Busy honey bees buzz in and out of the purple and golden doors; heavy, clumsy bumble bees drone lazily about them, and dancing yellow and white butterflies add to the charm. Humming birds often visit them, and as twilight falls, mysterious whirring humming moths dart their long slender tongues into the sweet honey, and all sorts of mysterious evening marauders float about, absorbing the sweets left by the more industrious insects of the sun.

Sometimes "sports" appear, as the result of this cross-fertilization by the bees. In a clump of white iris in our border, appeared one spring a single spike of snowy bloom striped with broad bands of purple. These "sports" may be moved and petted, and different varieties secured. I have never tried to regularly raise seedlings, but I understand that it is an interesting experiment in the home garden.

Following the German irises is *Iris orientalis*, one of the beardless kinds, in habit of growth more like our common wild flag, except for its greater luxuriance. This flowers late in June and in July. It is about eighteen inches high. The blossoms, only one or two on a stalk, are comparatively small, with slender drooping petals and erect standards. They are deep blue in color, and the buds are pointed and reddish. The flowers grow in a luxuriant mass, surrounded by a great number of long slender drooping green leaves. It is very charming, either in clumps or, if space can be afforded, in rows or borders.

Its flowering time is short, but it is gorgeous during that short time. This iris grows better and more luxuriantly in deep, moist loam. I have in mind some plants most carefully tended in a garden, which never did well, and were finally taken up, and carelessly set as an experiment, outside the wall, by the roadside, where the land dipped. They have flourished gorgeously ever since!

Next to appear in our train is the Siberian iris, also resembling one of our wild less known species — the one with the slender, grass-like stem and leaves: *Iris Virginica*. It blooms in late June and early July. The slender blossom-stalk grows to a height of three or four feet bearing three, four, or more flowers. The leaves are narrow and grass-like, and the

Siberian iris follows the oriental with gayly colored flowers. Plant in large clumps

English iris, which is much like the Spanish, is bulbous. Valuable as cut flowers

German iris, the best known of all, can be had in an immense variety of colors

delicate slenderness of the whole plant, is characteristic. The colors are light blue and white. It grows in large, showy clumps.

When one approaches the subject of Japanese iris, *Iris lævigata* or *I. Kæmpferi* of the catalogues, one may well be timid, so absolutely impossible would it be to even remotely describe their magnificence, both in color and size. Their regal flowers often measure ten, and sometimes twelve inches in diameter, and their rich and varied coloring easily surpasses that of all other types; one does not wonder that they were formerly held sacred in their native country. They bloom after the German iris has gone, and are sometimes referred to as "summer iris." The characteristics of this species are the plate-like flatness of the flowers — as opposed to the drooping three petals so characteristic of the family — the breadth of the petals and the gorgeous shades of color and bold and varied markings. They require a rich and moist soil, and are somewhat more difficult to raise abundantly, than their earlier sisters. But we must have them, in even a small garden, where even a few plants will be a joy. Any of the varieties are enchanting, so one can hardly go astray. I think none of the more gorgeous ones are more beautiful than the pure white, banded with gold.

If one has a large garden, having a pool, or swampy or moist place in its confines, the oriental and Japan and Siberian irises are most lovely in such a setting and flourish luxuriantly. The Japan iris is particularly adapted to this sort of culture. It and the ostrich fern are charming neighbors, and resemble each other in their royal attributes. "The Fleur-de-luce, the flower of chivalry" says Ruskin, "has a sword for its leaf, and a lily for its heart," and we always think of it as the flower of royalty.

The Japanese irises may also be used in borders, and are very effective grown in this way. They do not bloom as abundantly as the German irises, but the individual blossoms are so large and showy, that they are nearly as effective. I know of no more exquisite surprise in my garden than the appearance of the single perfect first flowers of this iris, where, the day or even hour before, were only the green leaves.

The varieties of iris of which we have been speaking have all been of the herbaceous kinds which increase by roots and stocks, forming large clumps. We now come to the bulbous division; the Spanish iris, *Iris Ziphium*, and the English, *Iris Ziphioides*. These have an entirely different habit of growth. The plants spring from small bulbs, which must be set singly, about four inches apart. They are easy of culture but must be protected during the winter by a slight mulch.

The Spanish iris flowers in June. It thrives best in full sunlight, in a light soil, and grows about one and one half feet high. Its blossoms are about the size and shape of our common wild iris, and blossoms, stem, and leaves are much smaller and more slender than the German iris, and there are two or three leaves only, on each stalk. The flowers are enchanting, of delicate shape, and beautiful clear colors; pure white, light blue, lemon, orange, and many orchid-like variations. They are easily forced for winter growth, either in pans, or boxes for cutting.

My first experience with Spanish iris was rather amusing. To begin with, I, having been both enchanted and impressed by my first acquaintance with it in the florist's windows, in royal bunches of its delicate perfect blossoms arranged in masses of the separate colors, thought it an unattainable luxury.

Therefore, when asked by a friend if I would like to add to her Holland order, I refused. Then, tempted by the fascinating memory, I hesitatingly asked the price, and to my amazement was told that the bulbs were twenty-five cents a hundred! It did not take me long to reverse my decision!

When the bulbs came, my surprise was great to find that a package four or five inches square held my "hundred." It was my first experience with the bulbous iris, and I had expected a package somewhat proportionate to the size of my own familiar iris root stocks! Expecting that the tiny bulbs would multiply and "spread" I planted them a foot or so apart, and as each bulb produced only a slender spike springing from between two grass-like leaves, and bearing one or two blossoms, my "row" which I had fondly imagined would impress all beholders, was invisible a few feet away! To add to the complication I had also intended it for a "screen" for some shabby plants just beyond! However, our pride was great, as the beautiful slender blossoms appeared, of every variety of enchanting color. And as none of our neighbors' gardens boasted any iris, save the old-fashioned kinds, every horticultural acquaintance was brought out to admire and envy.

We did not then know that the bulbs should be partially protected in the winter, and the second spring, we looked anxiously for the expected multiplication; but alas! Winter frost, and early cutworms had done their worst, and about one iris in ten appeared.

However, we learn by experience, and now we plant more closely, give the bulbs a light mulch in the winter, put Paris green and bran, mixed with molasses, near them to tempt the energetic and greedy cutworm, and call our Spanish iris one of the successes of our garden. I should also say that we found they were also inexpensive at home, where good mixed varieties may be bought for fifty cents a hundred.

The English iris, or *Iris Ziphioides* is much like the Spanish, only with somewhat larger flowers, and an even greater range of coloring, including many beautiful mottled varieties, besides the plain colors. It blossoms later than the Spanish — in late June and July, and therefore must be included in our continual blooming scheme. It is very easy of culture, somewhat more hardy than the Spanish, and also valuable for forcing.

Both the Spanish and the English send up only one or two stalks of bloom, and increase but slowly, and therefore take but little room in the garden. A row of them may be sandwiched in almost anywhere among plants which will fill in, later in the season. The English iris grows to a height of about two feet.

I must include in my list of "must haves" for the small garden, the tiny dwarf spring iris, *I. pumila*, sometimes called baby iris, one of the earliest flowers to bloom. It makes a charming border, set closely, but in separate plants, and is easily kept in bounds. There is an old-fashioned garden in Old Concord, where all the beds are edged in this way, and the slender thread of dark purple bloom outlining the paths in spring is most charming.

We have two or three "patches" of it at the street end of our perennial border, and when the "gardener" takes the refreshment of his five-minute walk about the garden before starting for his city law-office, these patches are the first places to visit in the early warm days.

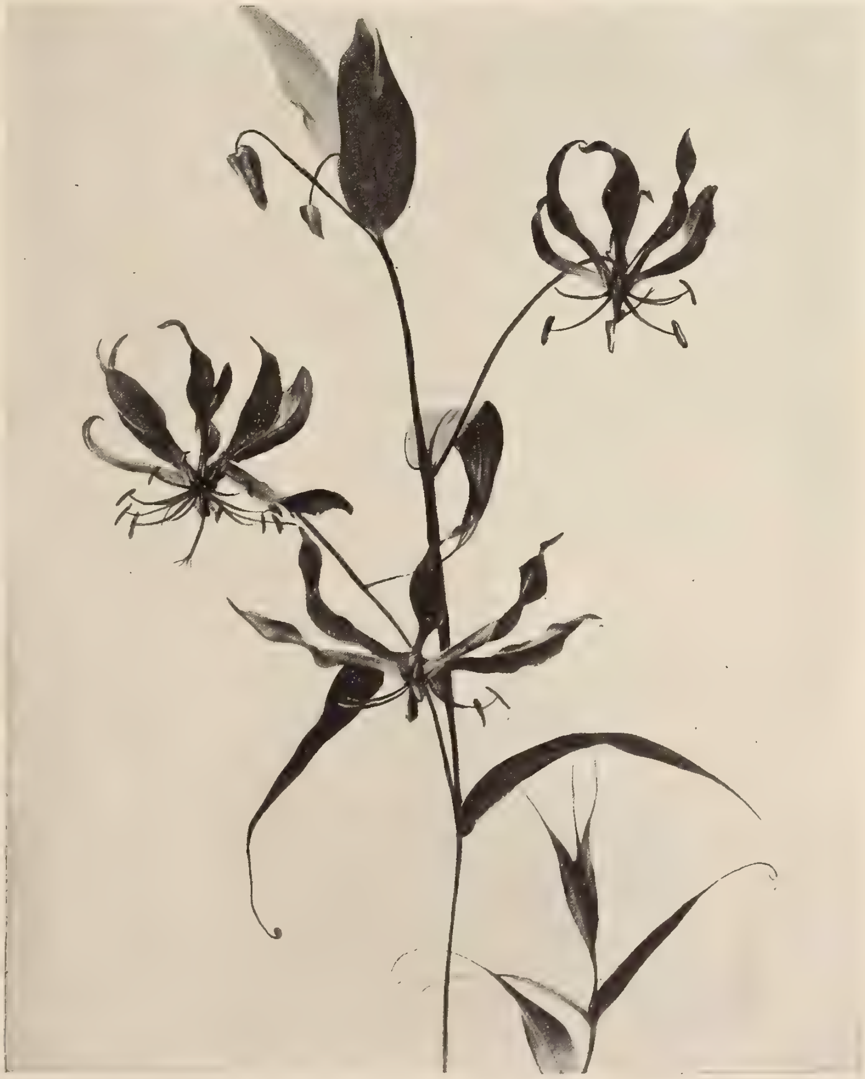
Here, some morning, when the snow has hardly all vanished from the cold corners, there will be found purple instead of brown, and in spite of our daily inspection it is always a surprise.

There are several varieties of color, but I think none is more lovely than the common purple. Of a beautiful rich, dark, royal shade, its tiny flowers unfold when just above the ground, and in their setting of minute sword-like leaves, are always a revelation and a delight. Evanescent and fleeting, they are hardly more than a promise of the joys to come, but in their glowing beauty are fitting, although diminutive, heralds of that regal train which shall soon follow, and which shall not have wholly passed before the summer begins to wane.

# The Climbing Lilies — By Parker T. Barnes, Pennsylvania

## AN ENGAGING LITTLE GROUP OF UNUSUAL SUMMER FLOWERS FOR THE GREENHOUSE, AND QUITE EASY TO GROW

THE gloriosas are odd, but handsome, plants which deserve to be better known and more generally cultivated. The blooming period extends from early summer through the fall, according to the species and time of starting into growth, and well grown specimens will have an abundance of flowers, one being produced in the axil of each leaf. They differ from most odd plants in that they are attractive and their interest is not for the specialist alone. In appearance the flowers greatly resemble some of the liliums, but the six segments of the perianth (petals) are reflexed like the cyclamen. The plants differ from the lilies in having a climbing habit. They make a weak growth and the long narrow leaves have tendril-like prolongations with which they cling for support. The flowers are borne singly in the axils of the leaves, on stems several inches long, are red or yellow in color, and vary in size from four to eight inches across, according to the species. The best flowers are produced when the plants are grown in a bright, sunny place.



If you have a greenhouse try this climbing lily, *Gloriosa superba*. The flowers are red, shaded yellow towards the centre

The oldest and best known is *Gloriosa superba*. It will grow five feet or more in height. The segments of the flowers are three to four inches long, much reflexed, and the edges of the segments undulated or crinkled. When the flowers first open the lower half of the segment is yellow, the balance bright red with yellow margins; with age the yellow merges into red. It flowers in the fall.

Although not as attractive as superba, *Gloriosa simplex* (also known as *G. virescens*, and *G. Plantii*) is worth growing because it flowers in early summer. The flowers open yellow, but with exposure to the sun, turn to a deep yellow-red. The edges of the petals are less undulated, and the entire flower is smaller, while the plant grows at least four feet high.

There is a variety of this species, *G. simplex*, var. *grandiflora*, with flowers much larger than the type (eight inches across). This variety is frequently sold as *G. superba*, or *G. simplex*, according to whether or not the segments are much crinkled.

The latest introduction

and the most beautiful of all is *G. Rothschildiana*, rich ruby-crimson and gently undulated. When the flowers first open they are considerably reflexed, but with age broaden out becoming horizontal or decurved. The only specimen I have ever seen of this species was about four feet in height, and the flowers about four inches in diameter.

Among the more recent importations there have been many bulbs of Rothschildiana which vary from the type. They have more or less yellow marked flowers. Some have varied sufficiently to warrant the botanists' naming them var. citrina. The flowers of this variety open a clear citron yellow with a feather-like band of deep claret color up the middle of the segment. As the flowers age, the yellow color suffuses into the claret color until the whole segment becomes tinted. This citron-yellow is very distinct from the more or less buff tinted yellow of superba and other species. Rothschildiana and its varieties will succeed in a somewhat lower temperature than the other gloriosas and would likely make an excellent plant for the window garden.

Similar to the last, but not nearly so handsome, is *G. Carsoni*, about six feet high with flowers four inches across of a brownish red color, each segment having a narrow margin of golden yellow.

The climbing lilies are easy to grow. They require a warm place — a night temperature of 65 or 75 degrees. The tubers are planted in the early part of the year — January to March. When starting the bulbs plant them in small pots; use ample drainage. Ample drainage in both pot and soil is important. Use a good sandy fibrous loam; one made of one part sand, three parts fibrous compost, and a little charcoal will give good results. Over the drainage put some of the coarser part of the compost, then put in the tuber surrounding it with a little sand, and finish by filling the pot with soil, leaving sufficient space at the top for watering.

Place the newly potted tubers in a warm or stove house and water sparingly with tepid water until growth shows above the ground. Growth once having commenced water copiously, preferably with tepid water. When the plants have filled the pots with roots they must be shifted to the pots in which they will flower; a six- or seven-inch pot is ample for one bulb the first year. Use the same kind of soil as they were started in. Be very careful not to injure the roots when making the shift, for they are brittle and resent injury. For this reason some growers prefer to pot the tubers at the time of starting in the pots in which they are to flower. When the plants have filled the pots with roots give them a watering once a week with a weak solution of liquid fertilizer — cow manure is best.

Once the plants have commenced to make growth supports must be provided. Bamboo, or other light stakes will do, or if the plants are where strings can be used, they will serve just as well.

The growth of the plants must not be checked at any time, for if anything happens to the stem, it will be fatal to the current year's success.

After the plants are through blooming, grow them with the same care that has been given previously, because the health of the plant from that time on will determine next year's success. When the leaves begin to show that growth is complete — by turning yellow — and the tubers are commencing to ripen, gradually withold the water until they have been dried off.

During the winter keep them in a warm dry place (60 degrees), and where cold draughts do not strike.

When the plants are started into growth again the soil can be shaken out from among the tubers and the tubers re-potted in such soil. One grower contents himself with taking off the surface soil in each pot and replacing it with fresh compost.

Seed is freely produced and the seeds are easy to grow. Sow thinly in pots and plunge the pots in a propagating bench where they can have a little bottom heat.

# The Annuals Best for Bedding—By Adolph Kruhm, Ohio

A DOZEN POPULAR AND EASILY GROWN KINDS THAT BEST FULFIL THE NEEDS OF A BEDDING PLANT. NOW IS THE TIME FOR YOU TO MAKE COMPARISONS

Let us understand clearly at the start what is meant by "Annuals for Bedding." Flower beds are of two distinct types — the tall, massive kind and the low growing "carpet" bed. In either case, the object is to produce a picture with flowers or contrasting foliage.

Those flowers, which are by their nature, adapted to the forming of either kind of bed, must necessarily possess certain characteristics in common.

Every flower bed must be built according to the laws of design or it is not harmonious. The same principle that underlies the building of a landscape, is found in every pleasing flower bed and the reason why some flower beds are more pleasing than others is that the builder used plants, the growth of which conformed with the laws of design.

These facts make it necessary to study the flowers intimately. Not only should the planter know all about their habit of growth and the colors of their flowers; but the length of their blooming season and its well defined limits deserve serious study. In order of their importance I like to put down the following points, which are essential in every flower suitable for bedding: (1) Symmetry of growth; (2) Harmoniously blending colors; (3) Length of blooming season; (4) Well-defined blooming season; (5) Good assortment of colors in the same class; (6) Different types, as to height, in the same class; (7) Ease of transplanting after the flowers show color.

It is surprising to find, after the "sifting down" process, how few among hundreds of annuals really possess all these characteristics in a greater or lesser degree. Indeed, it would be difficult to pick out from among the *easily grown* flowers, another dozen sorts that would create the same degree of satisfaction in the amateur's work. The one great feature in connection with all the annuals named below is that they actually grow easier than grass seed. All (except Ageratum and Petunia) have a coarse seed; all have a strong vitality, inducing quick and even germination; and all are so rugged that frequently weeds born among them have a slim chance for existence. These annuals will grow in any soil, even the poorest, and by actual test, some, like Alyssum, Phlox and Portulaca, will bloom more freely on thin soil than on rich soil.

Dwarf French marigold or tagetes, is very satisfactory for edging when yellow is available

It will be noted that the number of "tall" annuals, suitable for centre of beds, is sadly deficient. There are good reasons for this. Short lived plants, like annuals, cannot be expected to grow very tall. Those that do, are, by their nature of growth, unfit for bedding. Most *tall* annuals are so on account of their flower stems; and the bare stems, extending above the low foliage, do not look well in the formation of beds. On the other hand, balsams, which grow very symmetrically and "bushy," so completely hide their colors under an abundance of foliage that they really can only be considered where green foliage effect is desired.

Zinnias are most easily grown almost anywhere. Come in very many colors

Ageratum is the most easily grown, blue dwarf bedding flower in cultivation. It is nearly ideal, as all the points mentioned above are found in it. It contains sorts of various heights, all of which are of soft, harmonious colors that "blend" well with nearly all colors. *A. Mexicanum* is the parent type, growing about a foot tall. It comes in lavender, blue and white. Blue Perfection grows not over nine inches tall and its deep blue, tassel-shaped flowers are borne in semi-round clusters, which transform the plants into symmetrical half globes. Little Blue Star averages five inches tall and is ideal for edging and for very dwarf borders. Combine it with *Alyssum Benthami*, var. *procumbens*, Carpet of Snow — and you have a beautiful, low carpet bed that will find much favorable attention.

Alyssum is in a class of its own in connection with bedding. In addition to all the essential points, it will stand trimming and if toward the end of the first blooming period, you will cut off the flower spikes, it will make a new growth and bear another crop of bloom. Nor is that all. Seeds form at the lower end of the spikes while the tips are still in full bloom. These seeds drop, promptly start to grow and give a rapid succession of seedlings which furnish sweet alyssum flowers until hard frost. *Alyssum maritimum* is the common form that everybody knows. It self sows freely, the seeds are very hardy, and it will thrive on the same spot for years without any attention. Height, nine inches. *Alyssum compactum*, var. Little Gem grows about six inches tall and is of decidedly compact growth. When you plan a bed within well defined limits, this is the one to use. Carpet of Snow is a little beauty. Not over four inches tall, the plants spread considerably, each "carpeting" in time, a square foot. All alyssums are most dependable and faithful bedding annuals.

Asters are principally grown for cutting. However some of the dwarfer kinds make excellent bedding plants. Foremost among these are the Queen of the Market types, which are of compact growth, not over eight inches tall, and so free-flowering that each plant is transformed into a miniature pillar of color. Dwarf Pyramidal Bouquet, Shakespeare, Waldersee and the dwarf types of Comet aster are all ideal bedding plants according to the definitions offered above. No other annuals equal these for the massive effect obtained with even a limited number of plants and they bloom faithfully during their season. Asters are the exception to the statement made in the introduction as to the soil. They must have rich soil to do their best and great care should be exercised to grow them without permitting their growth to be checked at any time. Read Mr. G. W. Kerr's article in April Garden Magazine. It cannot be improved upon.

Candytuft is not unlike sweet alyssum in its character of growth and may therefore be used in the same manner. It goes alyssum one better in having an assortment of colors. Dwarf Hybrids, six inches tall, and the common type, eight to twelve inches tall put at the planter's disposal a good choice of height. However, candytuft has one drawback which should be emphasized with fairness to the planter — It must always have sufficient moisture, either a natural supply or by irrigation or by the middle of July the plants will be a disappointment. No other annual I have ever studied "burns up" as easily and its dry stalks present a sad sight in the flower garden. Successive sowings and abundant irrigation will overcome this deficiency, however. Candytuft comes in some unique carmine, purple, and lilac shades, not possessed by other plants of like character.

Dimorphotheca or Golden Orange Daisy is apt to earn me the title of a repeater (See April issue). But any one familiar with the merits of this unique annual will agree with me that it is one of the finest "bedders" in cultivation to-day. Its compact growing plants average a foot high by a foot across. The unique light yellowish green foliage contrasts handsomely with the brilliant orange flowers and for duration of bloom, even under trying conditions, it is in a class of its own. Try two dozen plants (from a ten cent packet), surrounded by a single row of sweet alyssum, in a round bed with full exposure to the sun.

Eschscholzia or California poppy is the brightest yellow annual in the collection. Plants are of compact, symmetrical growth, not over twelve inches tall. The delicate feathery bluish-green foliage contrasts handsomely with the bright yellow or orange flowers which do not extend very high above the foliage. It is one of those flowers that never tires the eye and its faithfulness in blooming should cause it to be a great deal more popular than it is at present. Burbank's New Crimson is of unique color and comes true, which cannot be said of the latest introductions in this class.

Drummond phlox grows rapidly and flowers freely. Keep in masses

Marigolds contain extremely tall and very dwarf types. The best of the tall types are found among the African marigolds, in Lemon Queen, Orange Prince, Eldorado, etc. The dwarfer sorts are mostly French Marigolds (also called Tagetes). A most pleasing combination is suggested in a solid bed of Orange Prince marigold, surrounded by a border of Legion of Honor or Little Brownie tagetes. Here we have an ideal combination in color, season of blooming, relation of heights and uniform length of blooming season. Little Brownie is an ideal little border plant in connection with any plants, the colors of which blend well with yellow and dark red. Become acquainted with this little 6-inch annual; it is adapted to many uses in the garden.

Petunias would be better appreciated and more extensively grown if nature had provided coarser seeds. It seems that this feature is responsible for the fact that these otherwise ideal annual plants are not found in more gardens. The almost dust-like seeds should be sown on the top of the ground and covered very sparingly. Water carefully and, after your seedling plants are transplanted, they will thrive and bloom like weeds. For bedding, the single sorts are my preference, because of their luxuriant foliage and freedom of bloom. Howard Star, Baby Blue, Countess of Ellesmere and sorts of a like character are easily grown and are ideal for informal beds. Do not attempt to curb the growth of petunias or to restrict them to certain limits. For best results let them make a rampant growth and do not mix them with other flowers.

Drummond Phlox is the one annual next to sweet peas and nasturtiums that everybody should know and grow. Only one feature is lacking to make it an ideal all-round flower — it is devoid of fragrance. But nobody cares particularly for this in a bedding flower and as such, phloxes have no rivals. From the small 4-inch Cecily phlox to the 12-inch Drummondi grandiflora we find a multitude of good points, such as few other flowers can boast. Easily started in any soil, rapidly growing and free blooming. Sown in masses, or in ribbon beds, phlox is equally showy, and if water is supplied during dry seasons, it blooms a long time. There is a splendid assortment of firmly fixed colors on hand. From pure white and delicate mauve to bright rose and vivid crimson, we have in phlox a collection of colors found in few annuals. Three distinct types furnish plants for nearly all bedding purposes — carpet bedding, semi-dwarf borders and foot-tall beds. Dwarf Cecily phlox grows four inches tall. Next come the dwarf grandiflora types, six to eight inches high, with nearly as complete an assortment of firmly fixed colors as the Drummondi grandiflora which averages a foot tall. Let phloxes grow in a solid row — don't thin them out and don't transplant them.

Portulaca is included in this assortment for two reasons — it is invaluable for dry sandy soils where few other flowers will thrive and they will furnish a fine undergrowth for taller growing plants, covering the soil with a carpet-like mass of glossy bluish green foliage. For rock gardens with poor soil, for sunny slopes or hot exposed situations, it is one of the most appreciative flowers I know. Plants spread considerably, growing as large as three feet across, but never more than six inches high. The many dazzling colors in both single and double varieties will create a cheerful spot in even the dreariest situations.

Verbenas are so easily grown from seeds and adaptable to so many purposes that it is a wonder more people don't grow them. Perhaps the florists are to blame for this because as soon as florists handle plants of of a certain type, the good public believes them "hard to grow." Nothing is more erroneous than this in connection with verbenas. The facts are that they are not only grown more easily than many vegetables, but the plants you raise from seeds will bloom more freely and longer than those propagated by florists from cuttings. Each plant, in time, will carpet a space three to four feet square. The beautiful dark green foliage will completely hide the soil, displaying to best advantage the magnificent flower umbels which average three inches across. Mayflower is a particularly fine sort with delicate fragrance. A dozen or more kinds of Verbena Hybrida offer a complete assortment of colors.

Verbenas are better from seeds than from cuttings. The dark green foliage makes a rich green carpet

Zinnias are considered rather "coarse" flowers by many. But zinnias have a mission — they grow nearly anywhere for anybody. When you begin to study the sturdy plants, their substantial foliage and strong symmetrical growth, you will begin to like them — more for their dependability and faithfulness than for any other reason. The newer sorts show splendidly contrasting colors which are well fixed. Some of them have unique curled petals, not unlike a cactus dahlia, zinnias also are procurable in three heights — like marigolds. The Dwarf Miniature averages four inches tall; the Compacta varieties twelve inches — the tall sorts as high as three feet on good garden soil.

Here are a few practical combinations for flower beds of annuals:

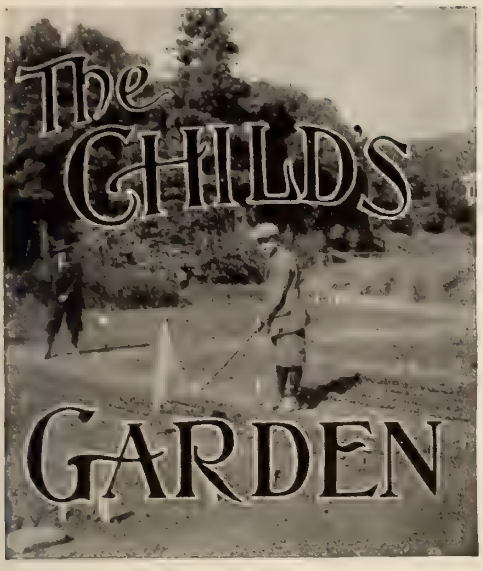
Tall crimson zinnias for centre of round bed or background of ribbon bed, rows 18 inches apart, 12 inches between plants, surrounded with row of Eschscholzias and bordered with Empress candytuft.

Orange Prince marigolds for centre or background, surrounded by row of compact white zinnias, bordered with Dimorphotheca. All rows 12 to 18 inches apart, 8 to 12 inches between the plants.

Verbenas in solid color for dwarf ribbon bed, plants 12 inches apart each way. When well established, border bed with mixed *Phlox Drummondi*, var. *compacta*. Water frequently.

## Twelve Annuals Best for Bedding

| COMMON NAME | DEPTH TO SOW SEEDS (INCHES) | TRANSPLANT INCHES APART | HEIGHT OF BLOOMING PLANT (INCHES) | BLOOMING SEASON SOWN AFTER MAY 15 | CHARACTER OF PLANT | SIZE OF BLOOM (INCHES) | COLOR | SUGGESTIONS FOR PRACTICAL USE |
|---|---|---|---|---|---|---|---|---|
| Ageratum | $\frac{1}{8}$ | 6 | 5–18 | July to frost | Upright and compact | 1–2; umbels | White, blue, rose, lavender | Use for carpeting |
| Alyssum | $\frac{1}{4}$ | Grow in solid row | 3–12 | End of June to frost | Spreading | 2–3; trusses | White | Ideal border plant |
| Aster, dwarf | $\frac{1}{4}$ | 6–8 | 6–12 | Aug. to frost | Upright and compact | 2–3; flowers | Complete collection | Use in solid beds and border with contrasting colors. |
| Candytuft | $\frac{1}{4}$ | Grow in solid row | 6–12 | End of June to frost | Spreading | 3–5; trusses | Good assortment | Border plant |
| Orange daisy | $\frac{1}{8}$ | 10–12 | 12 | July to frost | Spreading foliage; flowers upright | 2–2$\frac{1}{2}$ diameter | Orange and light hybrids | Use in solid beds |
| Eschscholzia | $\frac{1}{4}$ | 6 | 12 | July to frost | Spreading | 2 diameter | Yellow, white, and several shades of red | Ribbon beds or broadcast |
| Marigold | $\frac{1}{2}$ | According to var. 4–18 | 6–36 | July to frost | Upright | 1$\frac{1}{2}$–4; flowers | Good assortment in yellow | Dwarf for borders; tall for beds |
| Petunia | cover barely | 12 | 10–18 | Aug. to frost | Creeping | 2–3 diameter | White, blue, striped | Informal beds |
| Phlox (Drummond) | $\frac{1}{4}$ | Grow in solid row | 4–12 | End of June to end of August | Spreading | $\frac{1}{2}''$ flowers on 3'' umbels | Complete collection | Ribbon beds and borders |
| Portulaca | $\frac{1}{4}$ | 6 | 6 | Aug. to frost | Creeping | 1–1$\frac{1}{2}$; flowers | Good assortment | Rock gardens and beds |
| Verbena | $\frac{1}{4}$ | 10–12 | 8–10 | Aug. to frost | Creeping | 3; umbels | Complete collection | Informal beds |
| Zinnia | $\frac{1}{2}$ | According to var. 4–24 | 4–36 | Aug. to frost | Upright | 1$\frac{1}{2}$–3; flowers | All colors | Dwarf for borders; tall for beds |



Conducted by Ellen Eddy Shaw

## A Boy's Garden Experience

I BEGAN work for my garden by sowing tomato seed in window boxes the eighteenth of April, transplanting them twice in the house. The third time I set them out-of-doors in a coldframe. I had nine dozen at the time of setting out, so I thinned out all the weakly ones each time I transplanted. Later on I sold seven dozen at fifteen cents a dozen. Although my plants were smaller than usual they were very thick and stocky. I moved one dozen to my home vegetable garden and the other dozen I left in the coldframe My regular home garden is 40 feet wide and 65 feet long. I have another strip 15 x 81 ft., which I have not had good success with so far. The land is poor and partly shaded. The first year — 1909 — the earth was full of cutworms. In setting out one tomato plant I dug up 300 and then gave up the count, but not for lack of worms. My early peas were all that amounted to anything. Last year I laid that garden down to oats. This year my father helped me plow it and I planted the upper end as follows, rows running the width of my garden: Peas, 6 rows; beets, 4 rows; lettuce, 4 rows; radishes, 2 rows.

Everything was very late in coming up. But the peas blossomed as early as any in town and the beets came up evenly. The lettuce I had to water. When the dry weather came on everything burned brown. I was sorry to lose the early peas and beet greens. But I plowed again and laid down to Hungarian grass. It came up thicker and taller in the upper end of garden where I had put phosphate for the vegetables, I mowed it by hand and got it in. I think of seeding that garden down and not planting it again.

My father helped me plow my home garden and furrow it out. He also set most of the bean poles as mine were on too much of a slant. He put in one row of peas, and later, part of the beans.

I put in 50 hills of pole beans, 4 rows of peas, $1\frac{1}{2}$ rows lima beans, 40 hills of blue sweet corn, 13 hills Squantum sweet corn. Set out one dozen tomato plants and in a vacant space I planted parsnip seed but that is the last I saw of it. I had a good crop of weeds in that spot while waiting for the parsnips to come up.

Seeds from a hard shell winter Hubbard squash by mistake came up too thickly, and as my peas had gone by my mother suggested setting those young squash plants along the row. We transplanted all but three of them when they had but two leaves. Those transplanted soon caught up with the others and went way ahead of them. The squash bugs did not appear until quite late, but they made things lively for me when they did come. I found the surest way was hand picking and cutting out pieces from the leaves which showed signs of eggs.

The garden is just at the rear of the house, and when the hot July weather came I tapped the water pipe which entered the kitchen up one story and ran three sections of iron pipe out to my garden on a wooden support. Every few days I would hitch on the garden hose and sprinkle for about an hour very often my father would water while I would work around the house. I helped with the plowing and planting of my father's mill garden. I had twenty bushels of corn. The Southern corn went up 12 feet but the ears did not get ripe. I weeded and hoed some after school but most of it was done by my father and the mill help at dull times. When the hot wave struck us, they gave up the garden and I went in to see what I could do at irrigation. While the mill was running I could have all the water I wanted providing I could get it to the garden, so with my father's help I ran a couple of lengths of 3-inch iron pipe from the fire pump under the mill to the back and so out to the garden, then two lengths of 2-inch pipe which reached to the upper end of garden. To this end I fastened a T which gave me two outlets for an inch and a quarter pipe. One led to middle of garden, the other to middle of upper end. I would start the water and as fast as one furrow filled, I would bank the end and turn it in the next, and so down the length of the garden. Another year I hope to rig up something a little better. Provoost Thompson.

West Groton, Mass.

## The Garden in July

IN EARLY July make plantings of beans, carrots, lettuce, and radish. Keep in mind that Black Seeded Simpson is a very good kind of lettuce for mid-summer sowings.

If the garden plants become infested with black aphis, spray the plants with some one of the special remedies offered in the stores — they all have tobacco juice as the base.

Transplant into the wild flower garden butter-and-eggs, tall bellflower, loosestrife, and black-eyed Susan.

Keep constantly stirring the soil. The loose coating of dust thus formed prevents the escape of moisture from the soil.

Begin to make up your records for The Garden Magazine contest. We would like to know just how much your garden cost. Keep a careful record of each item. If your garden cost forty cents, what have you received from the garden for that forty cents? Estimate the worth of the garden. Get the regular market prices and it is easy then to do the sum. Write us a little story on what one can get out of the soil for a certain sum. Take some really good pictures of your garden. The pictures should show some definite thing. A picture should tell a story — we don't want pictures of yourself and your relatives, but pictures of the things you have grown.

Make cuttings of heliotrope and verbena. Always break off all leaves except the two or three terminal ones. Save work for the young plants in this way.

An experiment worth trying is to see if you can successfully transplant evergreens, Evergreens are very hard to take from their surroundings and put into new ones. Take a piece of sacking into the woods with you. Select the little tree you wish to move and thoroughly moisten the soil about the tree before commencing to dig. Dig it up with great care, keeping a good ball of earth around the roots. Tie the roots and ball of earth in the piece of burlap. Get home as fast as possible and set the tree in its new quarters. If you measure the hole from which the tree came you will then know the exact size of the new quarters. For tree roots must not be cramped. Water the hole in which the tree is to go. Put the tree in the hole carefully, without disturbing the roots or the "ball." Put some very rich soil all about and over the roots. Pack this in with your hands to be sure you have made good contact between soil and roots. Fill in the hole with soil and water freely. Do not let the little tree get dried out during its first days in strange quarters.

Begin now to make cuttings of geraniums. Take a geranium which has many branches. From the tip of a branch measure down about six inches. Make a slantwise cut through or just below a node (where the leaf joins the branch).

After the cut is made take the new geranium plant-to-be in your hand and pick off from it all but its two terminal leaves. Now the cutting is ready to plant. Make a little sandy cutting-bed in a sheltered spot and plant the geranium cuttings there. Keep the bed quite moist. After the cuttings have taken root pot them into three-inch pots. If you notice any color in the terminal bud between those two leaves you left on, then pinch the bud right off. Do not let the little cutting waste its energy blossoming too soon. It should be busily at work making roots. Later in the winter it will blossom as it should. Why not pot up some extra ones for the school?

## Won't *You* Write To Us?

WE HAVE received the following letter from one of our friends, which we believe will interest every rose grower, and even those gardeners who have but just started their garden and are not yet in the "rose-growing class." For some time we have been contemplating the possibility of a department in The Garden Magazine where rose lovers might relate their experiences, and this letter encourages us to hope that this summer we may hear from many of our friends who have been either successful or unsuccessful with their roses. Tell us about the behavior of varieties, etc.—
The Editors.

To the Editor:

Cannot you let us have, in an early number of The Garden Magazine, a "symposium" of some kind contributed to by rose growers and owners of rose gardens? Inasmuch as many people do not receive all the catalogues and keep themselves posted on the qualities of the new roses, do you not think it would be interesting and valuable to collect from the different sections of the country the opinions of many growers and the rose lists of what they consider their choicest varieties, and why? For instance, a list could be requested of say the six best roses for cutting and the six best roses for garden decoration, given in order of excellence or choice, each to be followed by the reason or by a brief summary of its points of excellence. Possibly the kinds ought to be divided, asking for a list of the best six or twelve Hybrid Perpetuals, Hybrid Teas and Teas, but as the Hybrid Tea class is now becoming so large and popular it might need a larger proportion of the whole, and the Tea class is now so small that it might not need as many as the others.

When I first began raising roses I had to find out by experience just what to do. I did not know that pruning should not be attempted without knowing first the requirements of each particular variety; I pruned a Soliel D'Or down close and got no flowers at all that season. I have learned, from reading, that the La France rose does not do well in rich soil, should not be pruned hard, and that by moving it into poor soil and neglecting it, one will get exhibition blooms. On the other hand, Prince Camille de Rohan, Belle Siebrecht, and some others require very hard pruning and very rich soil. Of course, many people plant roses without labeling them or keeping any record of where the different varieties are planted, but there are others who do keep tab on their roses and would appreciate any information given. Nearly everybody who prunes roses at all goes through the lot pruning them all alike, and as a consequence get no roses from many of the bushes. Cannot you do something to stir up The Garden Magazine readers and get them to write of their rose experiences?

Pennsylvania. H. C. R.

## Beginning A Rose Garden

IN EXPERT knowledge I was a novice when I set for myself the task of making a rose garden at my new home in the suburbs of New York. But in my love for roses I was an old hand — which may be the reason I have succeeded rather well.

To begin with, I sent for a catalogue of the Southern nursery which my mother used to regard as the source and inspiration of all floral lore. With no thought of caution and little discrimination, I seized at every bargain bait offered in those pages. Sixteen for a dollar; I ordered recklessly! It did not occur to me, until the little rose bushes arrived a week later, that I had spent $26.

Having known only the roses thriving in the South, I made many mistakes; only a few of the varieties from the nursery were suitable for the Northern climate. Maréchal Niel, Catherine Mermet, My Maryland, Safrano, Isabella Sprunt, Maman Cochet, Etoile de France, and the fragrant tea roses were set out in the spring and blossomed part of the summer, but faded in the autumn and died before winter was half begun. The others — Cloth of Gold, Cherokee, The Bride, and the Bridesmaid — did not bloom at all; their leaves were green and fresh-looking until late fall, but then they, too, went into a decline.

I knew enough to realize my initial mistakes, and the autumn was not far gone before I started to plan for hardy roses that would flourish in spite of the cold. I proceeded slowly, asking questions of the experts roundabout, and having bought Holland stock, I planted. While my springtime setting-out had been haphazard, I now ranged the rows (I had altogether 127 bushes) with mathematical precision. And the holes into which I plunged them were dug to a depth of eighteen inches or more. The locally bought bushes were on wild stock, whereas the southern nursery roses had been on their own roots. Strong stock is the secret of carrying a rose bush through the winter, but one must be careful to dig holes deep enough to cover up the wild stems; otherwise they will send out suckers and the roses will in time become as wild as the root bases.

After my strong bushes were all in the ground, I kept them well watered until the last of the warm days were past. Then I heaped fertilizer and hay and leaves around each bush, until only the top showed and they went through the winter — once the mercury dropped to eleven degrees below the zero mark — without mishap.

In my garden I now have Frau Karl Druschki, white; Mrs. John Lang, deep pink; Carolin Testout, silvery pink; Clio, flesh pink; Gloire de Dijon, creamy yellow, the tea rose Souvenir de Pierre Notting; American Beauty; crimson Hugh Dickson; and, daintiest of them all, the pink Killarney. I am wondering if, after all, my older and less-hardened friends from the South could possibly have been any more beautiful than these.

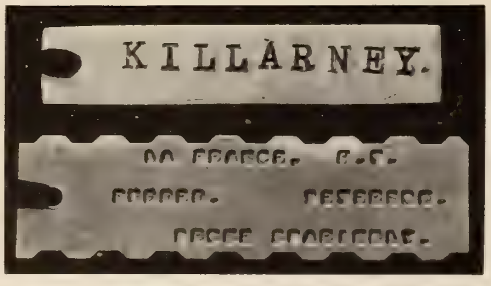
New Jersey. Francis M. Graves.

## Labels for Rose Bushes

I REMEMBER reading, some time ago, a suggestion for an imperishable label for rose bushes. The author stated that he procured from a linotype operator cast lines of metal type containing the names of his roses, and after drilling holes in one end, wired them on. But as these would be rather hard to read, owing to the fact that the letters are reversed, I think the idea of a friend of mine still better. He makes his labels with an addressing machine, using the metal plates that feed into the machine and make the dies for addressing envelopes. As these letters are indented they are more easily read than if reversed; and as three lines may be printed on each plate, other information may be recorded, such as when the bushes were planted, from whom purchased, whether own root or budded, pruning directions, etc. This label has another advantage over the cast line of type in being thinner, so that the hole for inserting the wire is easily made.

But better than any other so-called imperishable label that I have ever seen is one that I make for labeling my own rose bushes. I get sheet aluminum cut into narrow strips and shortened to suitable lengths, and cut the names into the soft metal with a set of steel letters such as are used by mechanics to mark their tools. The work is exacting and somewhat tedious, as each letter has to be hammered separately, but these labels are well worth the pains to make them; the aluminum always stays bright, and when the sunken letters fill with dirt the label becomes the easier to read because of the contrast.

Pennsylvania. H. G. Reading.



How much easier to read is the upper label made of aluminum with cut-in letters

## Mildew on Roses

ROSE mildew is a fungus that grows on the outside of the rose leaves. There are usually two periods of infection — soon after the spring growth of the bushes, usually a very light attack, and the spring rains wash many of the fungus spores to the ground where they die in a few days. But the second and principal attack is usually in the latter part of June, succeeding the June bloom, and in July and August. The vitality of the rose bushes is then comparatively weak and the disease makes great headway.

If there is any evidence of mildew being present in the garden, spray the bushes at least every four days. If it rains and the spray is washed from the leaves, repeat the spraying immediately. Probably the best spray for the purpose is liver of sulphur (potassium sulphide). Early in the season use one ounce of liver of sulphur to three or four gallons of water. Later on, when the leaves are more developed, use one ounce to two gallons of water. Add a small quantity of liquid glue or else the whites of two eggs to the spray so that it will stick to the leaves.

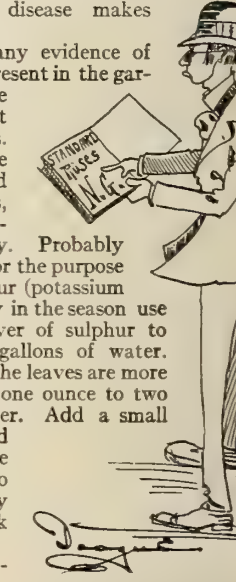
Another remedy is two parts of flowers of sulphur mixed with one part of powdered slacked lime. Have the sulphur and lime as fine as possible; place them in a cheesecloth bag and shake the powder over the mildewed leaves early in the morning.

If you have only a small number of rose bushes, rub the affected leaves between the finger and thumb, thus crushing the mildew germs inside the leaf. This crushing should, of course, be done gently so as not to destroy the tissue of the leaves.

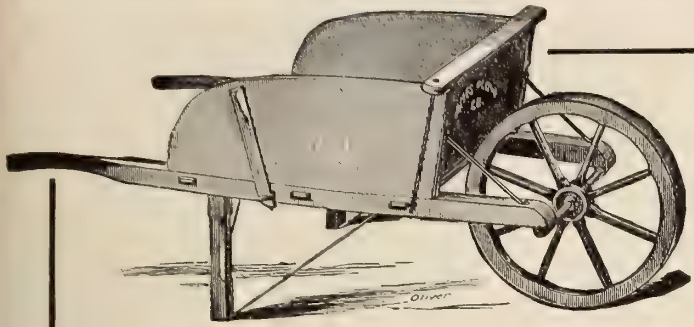
In the fall, gather and burn all refuse in the rose garden so as to destroy any mildew spores which may have dropped to the ground. In midwinter and before any of the leaves are formed, every bush which was affected with mildew the previous summer should be sprayed with a solution of one ounce of sulphate of copper, commonly known as blue vitriol, dissolved in one gallon of water, or with bordeaux mixture. Bordeaux gives a whitish appearance to the bush, and if used after the bush starts to grow it will damage the young leaves. Also spray the ground and cut off all wood showing any trace of the mildew fungus.

While all varieties are not equally subject to mildew, some are particularly susceptible to it. The Crimson Rambler, for instance, the old rose, Giant of Battles — of a very beautiful shade of red but discarded on account of its tendency to mildew — Her Majesty, and Killarney.

Oregon. Frederick V. Holman.



What a Massachusetts correspondent. L. J. Doogue. has to say about standard roses.



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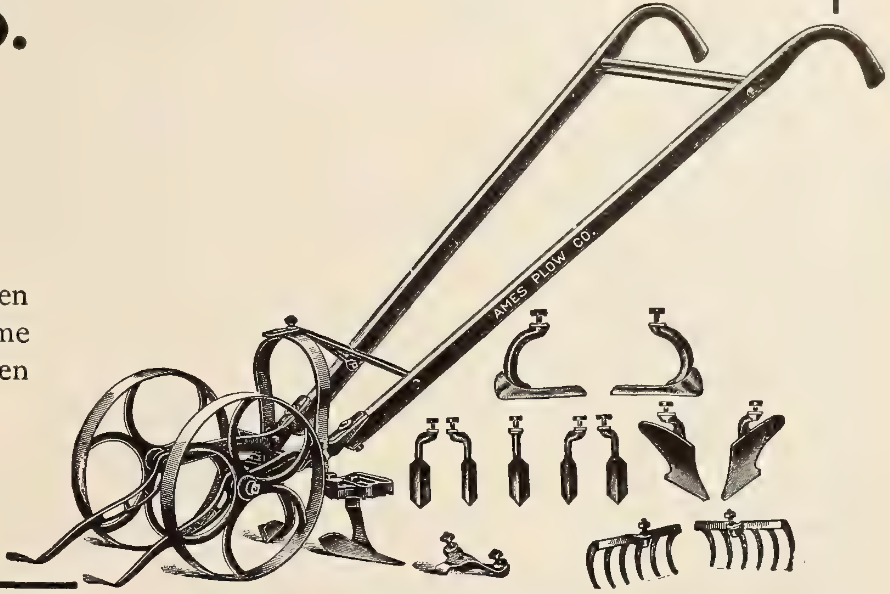
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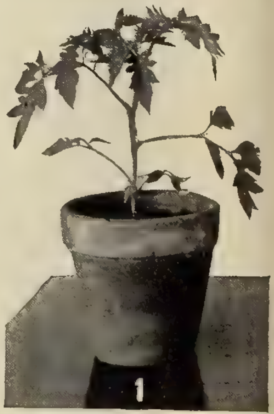
VEGETABLES

## How Transplanting Improves a Plant

IT HAD long been a common practice among plant growers to prick out young seedlings into flats when they were from two to three weeks old and possibly again about three weeks later before they were set in the field. Some of the gardeners about the city, who made it a business of growing cabbage, tomato and celery plants for sale, claimed that those plants which had been transplanted once or twice before setting were much better plants and, as it took more labor to handle them in this way, they demanded $2 to $3 per thousand for them. Other gardeners claimed that there was nothing in it and grew their young plants entirely where the seed was sown and so were able to realize a good profit by selling at from $1 to $1.50 per thousand.



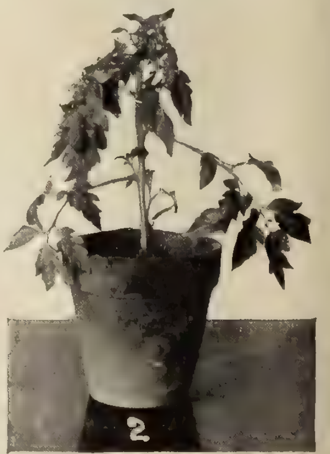
Transplanted twice; yield, 9.89 tons an acre

This caused a considerable amount of discussion. Neither side had any actual data to prove its beliefs in regard to the matter and, since it was of far more importance to the growers of these various crops, I decided last season to carry out a test to determine the effect of each of these methods of starting young tomato plants upon the earliness of bearing and the yielding powers. The variety grown was Greater Baltimore.

The plants were started in a hotbed and handled as indicated in the following table:

| PLOT NO. | SOWED IN HOTBED | TRANSPLANTED | SET IN FIELD |
|---|---|---|---|
| 1 | March 25 | | May 21 |
| 2 | " " | April 8 | " " |
| 3 | " " | April 8 to 29 | " " |

Those in plot No. 1 were left in the hotbed where they were sown until they were set in the field. Those in plots 2 and 3 were transplanted into gardeners' flats and placed back in the bed for a week and then put in coldframes. Here they were hardened off thoroughly before setting in the field by entirely removing the sash. The condition of these plants started in the three ways at the time they



Transplanted once; yield, 8.38 tons an acre

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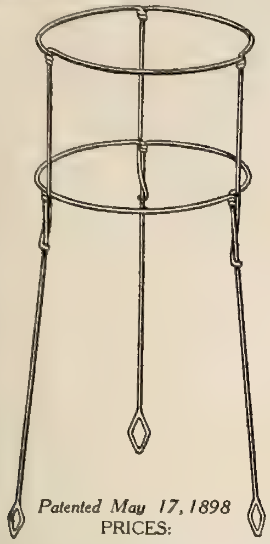

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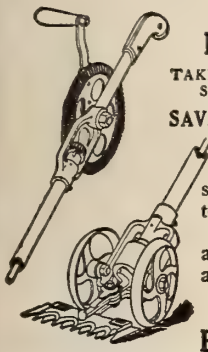

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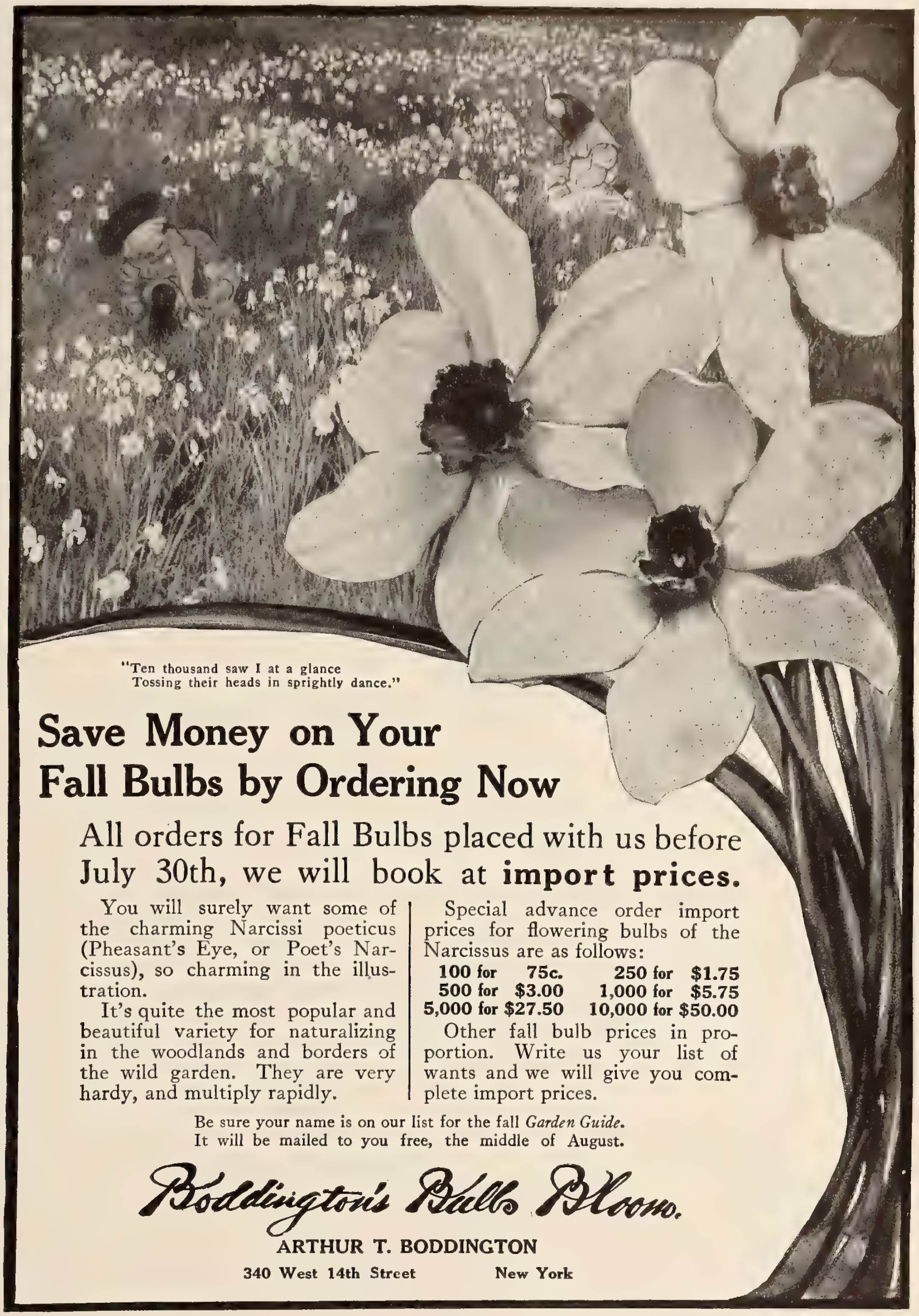

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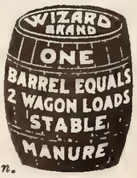
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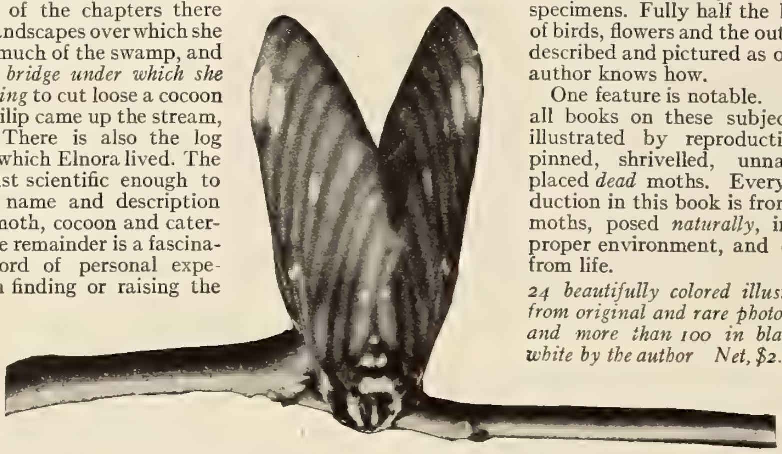
MOTHS OF THE LIMBERLOST

By Gene Stratton-Porter

THERE is no portion of the country which has been made more familiar to hundreds of thousands of readers than the Limberlost Swamp, that woodland and marsh which has been the setting of Mrs. Porter's wonderful novels, "Freckles," "A Girl of the Limberlost," and "The Harvester."

It is about this very bit of Indiana that Mrs. Porter has written her new book, "Moths of the Limberlost," and it is the most unusual and interesting nature book ever imagined. It is a story of the "Moths" of the Limberlost which every reader of "A Girl of the Limberlost" will remember. Mrs. Porter pictures and describes the moths hunted by Elnora, and in many of the chapters there are the landscapes over which she hunted, much of the swamp, and *the very bridge under which she was working* to cut loose a cocoon when Philip came up the stream, fishing. There is also the log cabin in which Elnora lived. The text is just scientific enough to give the name and description of each moth, cocoon and caterpillar; the remainder is a fascinating record of personal experiences in finding or raising the specimens. Fully half the book is of birds, flowers and the out-doors, described and pictured as only the author knows how.



One feature is notable. Almost all books on these subjects are illustrated by reproductions of pinned, shrivelled, unnaturally placed *dead* moths. Every reproduction in this book is from *living* moths, posed *naturally*, in their proper environment, and colored from life.

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In a remarkable review a page and a half long in *The Independent*, Corra Harris, Author of "The Circuit Rider's Wife" and "The Recording Angel," thus defines the extraordinary charm of Mrs. Porter's book:

"There is not a financier in Wall Street, not an artisan, nor grocerman, nor clerk in any city who reads this story who will not discover in himself some dim relationship, buried beneath the dry and dead leaves of commercialism, to this medicine man, who lived with his dog in a cabin in the green shade upon the banks of its singing water. A vacation likeness to be sure, for few men of to-day are sufficiently hardy in mind or body to endure such an existence longer than three weeks. But that is the fault of our kind of civilization, not of the life portrayed in "The Harvester."

*Illustrated in colors. Net, $1.35.*

"Freckles" and "A Girl of the Limberlost," the other members of this delightful trio, are selling better to-day than when they were published six and three years ago, respectively.

Garden City DOUBLEDAY, PAGE & COMPANY New York

Have You Plenty of Water

In Your House In Your Stable In Your Garden
For Your Lawn In Your Factory ?

If not, write to our nearest office and let us tell you the cost* of a water supply ready for use. We have had seventy years' experience in building pumps, and make a specialty of installing complete water-supply systems.

The "REECO" Water System

is simple and safe in operation, durable and dependable. The Reeco Engines are operated by hot air, with coal, wood or oil for fuel. Nearly 50,000 are in use throughout the world.

Our "Reeco" Electric Pumps also give satisfaction wherever electricity is available.

*Important reduction in prices

Write nearest office for Catalogue U

RIDER-ERICSSON ENGINE CO. New York Boston Philadelphia Montreal, P. Q. Sydney, Australia

were set in the field is shown in the illustrations.

At the end of the season we checked up our results and found them to be as follows:

| PLOT NO. | METHOD OF HANDLING | YIELD PER ACRE |
|---|---|---|
| 1 | Transplanted twice | 9.89 Tons |
| 2 | Transplanted once | 8.38 " |
| 3 | Not transplanted | 5.95 " |

Not transplanted
yield, 5.95 tons an acre

The crop was sold to a canning factory for $10 per ton which made the value of the fruit from the above test plots respectively $98.90, $83.80 and $59.50. The plants were set on each of these plots at a distance of 5 by 5 feet which made 1742 to the acre. The cost of transplanting the plants was $1 per thousand or $1.74 extra expense per acre for those that were transplanted once, and $3.48 for those that were transplanted twice. After deducting each of these items from the value of the crops secured from the corresponding plots we had the following figures which represented the results by actual test secured from the plants started and handled in the three different ways:

| | |
|---|---|
| Plants hotbed grown, transplanted twice before setting . . . . . . . . . . . | $95.42 per A. |
| Plants hotbed grown, transplanted once befor setting . . . . . . . . . . . | 82.06 per A. |
| Plants hotbed grown, not transplanted befor setting . . . . . . . . . . . | 59.50 per A. |

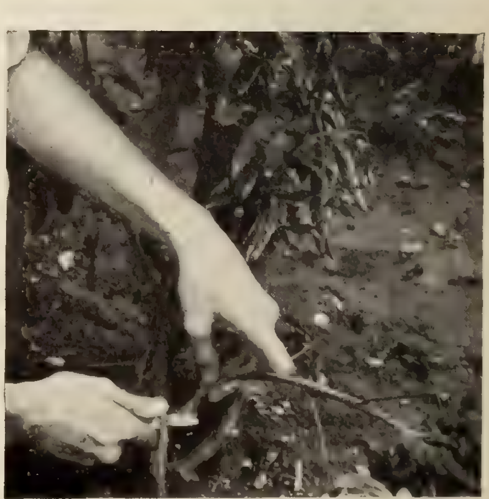
The season was rather dry, which probably made the differences somewhat greater than they would have been in a wet season. However, the point at stake was settled quite definitely and we will be looking for transplanted plants in the future and will be willing to pay a much higher price for them.

Indiana. J. S. Boyle.

## Staking and Pruning Tomatoes

THE biggest returns are realized from tomato plants that have been staked and pruned. Plants so treated throughout the season will excel in yield any other tomato plants you have ever had. On an average, each branch will set three clusters of four large fruits each. We have had thirty-six fruits of eight ounces each, or eighteen pounds of fruit, as the average per plant. After you have learned how to thin out poorly-shaped specimens early in their development, you may even beat this record.

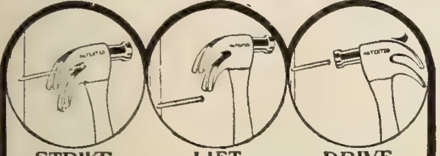
This treatment will likewise enable you to set the plants 2 x 2½ ft. apart another year, instead



Remove all side shoots that develop at the base of the plants and along the three main stalks

# For the Interior & Exterior of "THE GARDEN" HOME

Under this heading are printed advertisements offering furnishings, materials and equipment for your home that will add to its comfort and convenience. These advertisements may be depended upon as being trustworthy. If you want any further information about the building and furnishing of your home The Garden Magazine Readers' Service, Garden City, New York, will gladly supply it.



**No Strain When High Nailing**

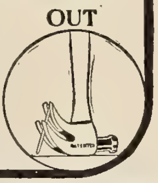
**DOUBLE CLAW HAMMER**

*"for the mechanic with an ambition to succeed"*

**16 oz. or 21 oz. Head—WHICH?**
**$1.50 at your dealer's**
**or from us, delivery prepaid.**
**Worth ten times more than the common hammer—costs three times more to make.**

**DOUBLE CLAW HAMMER CO.**
**453 Broadway**
**Brooklyn, N. Y.**

**Pulls The Nail Out Straight Without A Block**



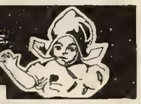
THREAD AND THRUM RUGS

*Made to order—to exactly match the color scheme of any room*

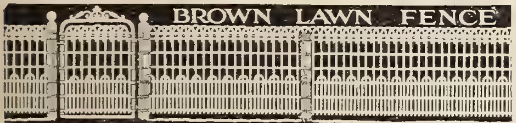
"You select the color—we'll make the rug." Any width—seamless up to 16 feet. Any length. Any color tone—soft and subdued, or bright and striking. Original, individual, artistic, dignified. Pure wool or camel's hair, expertly woven at short notice. Write for color card. Order through your furnisher.

*Thread & Thrum Workshop*
*Auburn, New York*

**DUTCH BULBS and ROOTS**
Direct from Holland. Catalog full of vital facts FREE.
Write to-day to
**Gt. van Waveren & Kruijff**
American Branch House 140 N. 13th St., Philadelphia



*See detail advertisement on page 379*



**Many Styles LAWN and FARM FENCE Low Prices**
Cheaper than wood, lasts longer and more ornamental. We sell direct to users at manufacturers' prices. Write today for catalog.
**The Brown Fence and Wire Co.,** Dept. 95, Cleveland, Ohio

## Fly-Proof

Keep your garbage tightly shut in—stamp out the worst breeding place for flies by using

**WITT'S CANS and PAILS**

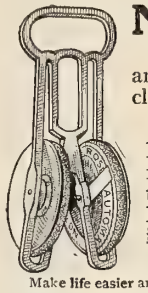
made of corrugated steel. Close fitting lid makes them odor-proof, *fly-proof*. Outlast two of the ordinary kind.

Three sizes of each. Look for the yellow label. At all dealers or direct.

**The WITT CORNICE CO.,**
**Dept. 9, Winchell Ave.,**
**Cincinnati,**
**Ohio**

Witt's
Witt's

## A HOUSEHOLD NECESSITY



Here's the simplest, handiest and most efficient household article ever made.

**The "Universal" Sharpener**

It puts a keen lasting edge in a few seconds on either kitchen or table knives, or on pocket knives. No excuse now for a dull knife in the house.

**Price, Postpaid, 50c**

Make life easier and happier by sending for this article today
**ARTHUR C. EDDY, P. O. Box 355, Thompsonville, Conn.**

## BOOKBINDING

¶ If your books are shabby and need binding or repairing consult

**HENRY BLACKWELL**
**University Place and Tenth Street, New York, N. Y.**

## RATS KILLED BY SCIENCE

By the wonderful bacteriological preparation, discovered and prepared by Dr. Danysz, of Pasteur Institute, Paris. Used with striking success for years in the United States, England, France and Russia.

**DANYSZ VIRUS**

contains the germs of a disease peculiar to rats and mice only and is absolutely **harmless to birds, human beings and other animals.** The rodents always die in the open, because of feverish condition. The disease is also contagious to them. Easily prepared and applied.

**How much to use.**—A small house, one tube. Ordinary dwelling, three tubes (if rats are numerous, not less than 6 tubes). One or two dozen for large stable with hay loft and yard or 5000 sq. ft. floor space in buildings. Price: One tube, 75c; 3 tubes, $1.75; 6 tubes, $3.25; one doz. $6.

**INDEPENDENT CHEMICAL CO., 72 Front St., New York**

Plan now for a pleasant porch next Summer. Ask us about **Komi Green Painted Porch Curtains**
**R. H. COMEY CO., Camden, N. J.**
**Chicago, 2440 to 2448 Washburn Avenue**

## Genasco

THE TRINIDAD-LAKE-ASPHALT
**Ready Roofing**

Trinidad Lake asphalt is Nature's everlasting waterproofer—and that's what Genasco is made of. Write for samples and the Genasco Book—free.

**The Kant-leak Kleet,** for smooth-surface roofings, prevents nail-leaks.

**THE BARBER ASPHALT PAVING COMPANY**
Largest producers of asphalt, and largest manufacturers of ready roofing in the world.
**Philadelphia**
**New York San Francisco Chicago**

## IT'S OUT OF SIGHT WHEN NOT IN USE

Occupies only a small space when in use—but accommodates a large wash. Folds up like an umbrella.

**Hill's Clothes Dryer**

Made in two light parts—reel and post. Special interlocking device—reel cannot blow off—clothes cannot drag. Best materials, best workmanship, all metal parts malleable iron galvanized, no rust, no wear. Gives you a good lawn, no unsightly posts, lines, clothes poles or trampled grass.

**Saves time and strength**
**Will last a life-time**

*Sold by leading dealers everywhere. If they cannot supply you we will. Send for illustrated Folder No. 12 and your dealer's name.*

**HILL DRYER CO.**
**312 PARK AVE.**
**WORCESTER, MASS.**

**The Stephenson System of Underground Refuse Disposal**

Keep garbage and waste out of sight, under ground or below floor in

THE STEPHENSON LYNN TRADE MARK MASS **Underground Garbage and Refuse Receivers**

Sanitary, odorless, fly-proof, a clean back yard, a fireproof disposal of refuse in cellar, factory or garage.

**Underground Earth Closet** with portable steel house for contractors, farm or camp.

Nine years on the market. It pays to look us up.

***Sold direct. Send for circular.***
**C. H. STEPHENSON, Mfr.**
**40 Farrar St. Lynn, Mass.**

Iron Railings, Wire Fences and Entrance Gates of all designs and for all purposes. Correspondence solicited: Catalogs furnished.

## FENCE

Tennis Court Enclosures, Unclimbable Wire Mesh and Spiral Netting (Chain Link) Fences for Estate Boundaries and Industrial Properties—Lawn Furniture—Stable Fittings.

**F. E. CARPENTER CO.,** 253 Broadway
New York City

What's the use?

Why bother to raise so many "good things" unless —

—unless you *save* them. Your wife can "put up" many kinds of fruit. But it isn't so *easy* to "can" vegetables.

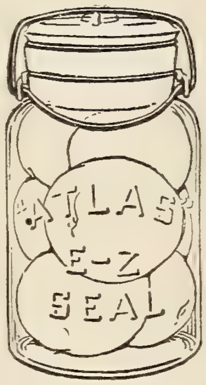
Not — if she *depends* on old-style, narrow-necked, tin-topped, screw-capped jars, that take in only *small* fruit. This year find out the better way to "put up" fruit — and vegetables, too — the

E-Z SEAL JARS

This is the all-glass jar, with the all-glass cap —no metal to taint the fruit—no twisting and turning. No shattering, no splattering. Easy to fill, easy to seal, easy to open and clean.

Don't allow good garden stuff or fruit "to go to waste." You may be sure it will keep — vegetables and fruit will *not* spoil in these air-tight, all-glass sanitary jars.

Free Jar—
Free Book



Cut out this coupon, take it to your grocer —he will give you one E-Z Seal Jar—FREE. Be sure and write us for FREE Book of Recipes—it tells many things you should know. Get the Jar from the *grocer*. Get the Book from *us*.

**HAZEL-ATLAS GLASS COMPANY**
**Wheeling, W. Va.**

1-Qt. E-Z Seal Jar CH
FREE for the Coupon

Please note—in order to secure free jar this *coupon must* be presented to your dealer before Sept. 1st, 1912, with blank spaces properly filled out.

HAZEL-ATLAS GLASS CO.
Wheeling, W. Va.

This is to certify. That I have this day received one "Atlas" E-Z Seal Jar Free of all cost and without any obligation on my part. This is the first coupon presented by any member of my family.

Name..........................................

Address..........................................

TO THE DEALER: Present this to jobber from whom you recieved E-Z Seal Jars. All coupons must be signed by you and returned before Nov. 1st, 1912.

DEALER'S CERTIFICATE. This is to certify, that I gave away one "Atlas" E-Z Seal Jar to the person whose signature appears above.

Dealer's Name..........................................

Address..........................................

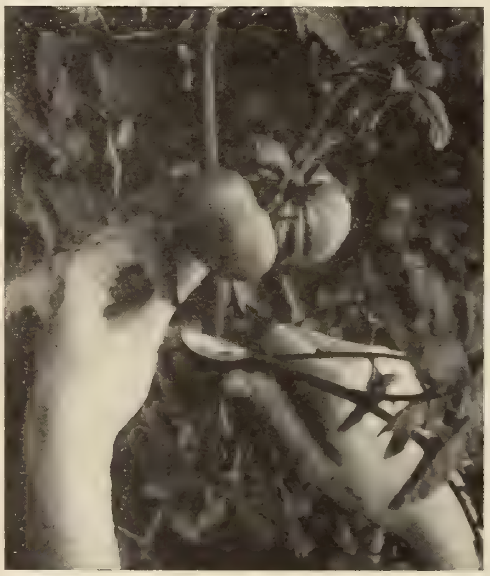
of 3 x 3, without detriment to either plant or yield. You can grow fifty tomato plants where you formerly grew thirty, and these fifty will produce more and better fruits, plant for plant, than the thirty ever did, grown in the old, easy fashion.

Here is what should be done early in July:

Plants set out the last week in May will be about two to two and a half feet tall and will nearly cover the space between rows if they are set two and a half to three feet apart each way. Secure a number of strong 5-foot stakes (any lumber yard will furnish fifty oak stakes 5 feet tall and two inches square, for about $4). Drive one stake to each plant, setting it eight to ten inches deep and about four inches away from the base of the plant.

Get your pocket knife and reduce the number of branches on each plant to three of the strongest, cutting away all the rest to within one inch of their base. Tie the remaining three to the stake with raffia or strips of rags. Place the first cord about six inches above the surface of the soil, the second eight inches above that, and so on.

Go over the patch on an average of once a week and prune and trim. The plant, feeling its growth curbed in certain directions, attempts to make up for this by sending out numerous side-shoots from the main stalk and suckers from the branches. Trim regularly all shoots that are produced at base of plant so as to send all the strength of the plant into the vines and flowers above. Trim all suckers that develop between leaf-joints on the branches because they usually thrive at the expense of some cluster just beyond them.



Cut out all suckers that develop along the branches, usually at the leaf joints

By August first, the plants, or rather the three branches, will have reached the tops of the poles. Then cut out the crown of each branch and throw all the strength of the plant into the fruits already set and the clusters in process of forming. After September first, cut off all flower clusters, for you cannot possibly hope to get reasonably good-sized fruits from flowers set after that period. In the meantime, don't forget to go over your patch occasionally and trim all shoots and suckers close to their base.

With the approach of cool nights, when the days are getting shorter, it pays to trim the foliage from around large clusters so as to give the sun a chance to help color the fruits. If you desire to raise some extra choice clusters for exhibition purposes, it will pay you to slip some paper bags over them when they are about half grown. The same method is employed by grape growers to keep insects from injuring the fruit.

A few tablespoonsful of nitrate of soda, dissolved in a bucket of water, will hasten maturity of fruits later in the season. A quart applied to each plant at intervals of a week will make a perceptible difference in the quickness of ripening.

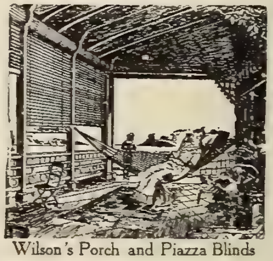
Ohio. Adolph Kruhm.

WILSON'S OUTSIDE VENETIANS
BLIND AND AWNING COMBINED

For town and country houses. Very durable and artistic. Easily operated from inside. Admit air, exclude sun rays.

SPECIAL OUTSIDE VENETIANS

for porches and piazzas, exclude the sun; admit the breeze Virtually make an outdoor room. Orders should be placed *now* for summer delivery.



Wilson's Porch and Piazza Blinds

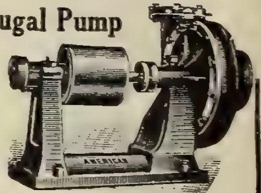
Write for Venetian Catalogue No. 4.

Also inside Venetians, Rolling Partitions, Rolling Steel Shutters, Burglar and Fireproof Steel Curtains, Wood Block Floors.

**Jas. G. Wilson Mfg. Co.**
1 and 3 W. 29th Street
NEW YORK

AMERICAN

1/3 More Water raised and delivered by the "American" Centrifugal Pump than by others because the impeller is accurately machined to the casing, preventing any sudden change in direction of the water. *Not an ounce* of power is wasted. Every "American" Centrifugal absolutely *guaranteed*. Write for new *catalog* 120.



THE AMERICAN WELL WORKS
Office and Works, Aurora, Ill.
First National Bank Building, Chicago

MURRAY & LANMAN'S
Florida Water
"THE UNIVERSAL PERFUME"

Is unique in quality and universal in popularity. It cannot be replaced by any of its imitators. For the bath, for use after shaving, as a rub-down after exercising, and for general dressing-table use, it is matchless. Its fragrance is delightful and permanent, and during hot weather especially, Murray & Lanman's Florida Water is truly a necessity.

ACCEPT NO SUBSTITUTE!
SOLD BY ALL LEADING DRUGGISTS
*Sample mailed on receipt of six cents to defray mailing charges.*

LANMAN & KEMP, 135 WATER STREET NEW YORK

Like a yard with shade trees and shrubbery, cool, seclusive and inviting, is the porch screened from the blazing sun with

**Burlington Venetian Blinds**

You can easily fit your porch with Burlington Venetian Blinds, and you can readily adjust the blinds at an angle that will allow free circulation and yet keep out the hot sun.

**Write for FREE, Illustrated Booklet**

This booklet will show you that your porch can be that which it ought to be—your summer living room.

**Burlington Venetian Blind Co.**
**327 Lake Street, Burlington, Vt.**

**LOOK OUT FOR SPARKS**

No more danger or damage from flying sparks. No more poorly fitted, flimsy fireplace screens. Send for free booklet "Sparks from the Fire-side." It tells about the best kind of a spark guard for your individual fireplace. Write to-day for free booklet and make your plans early.

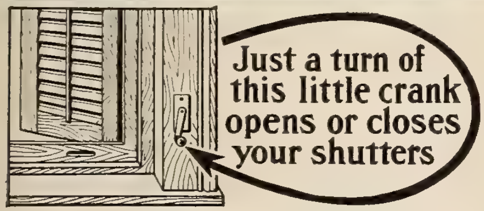
**The Syracuse Wire Works**
**107 University Avenue, - Syracuse, N. Y.**

THE GREATEST ACHIEVEMENTS IN MODERN HEATING ARE ACCOMPLISHED WITH KELSEY WARM AIR GENERATORS

SEND TO DAY FOR BOOKLET

KELSEY HEATING COMPANY

MAIN OFFICE: SYRACUSE, N.Y. NEW YORK OFFICE 154 5TH AVE


Just a turn of this little crank opens or closes your shutters

**Close Your Shutters From the Inside**

without removing the screens and admitting flies and mosquitoes. With

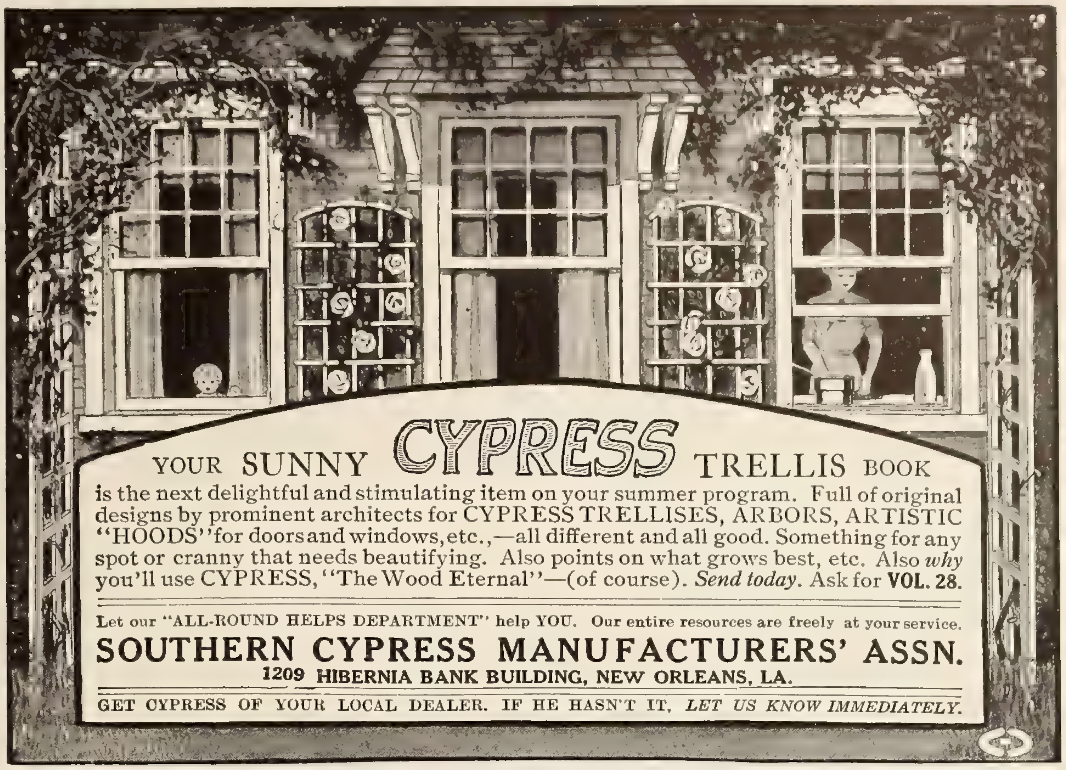
THE MALLORY SHUTTER WORKER

it is not even necessary to raise the sash. Shutters are opened, fastened at any angle or closed and locked *from the inside* by simply turning a little crank.

Compactly made and attractively finished to suit your woodwork. Any carpenter can quickly put them in place on old or new frame, brick or stone dwellings.

If your dealer hasn't them, send for illustrations and descriptive price list to

**Mallory Manufacturing Co.**
**253 Main Street, Flemington, N. J., U. S. A.**



YOUR SUNNY CYPRESS TRELLIS BOOK is the next delightful and stimulating item on your summer program. Full of original designs by prominent architects for CYPRESS TRELLISES, ARBORS, ARTISTIC "HOODS" for doors and windows, etc.,—all different and all good. Something for any spot or cranny that needs beautifying. Also points on what grows best, etc. Also *why* you'll use CYPRESS, "The Wood Eternal"—(of course). *Send today.* Ask for **VOL. 28.**

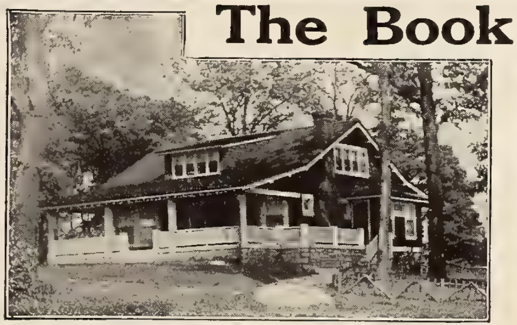
Let our "ALL-ROUND HELPS DEPARTMENT" help YOU. Our entire resources are freely at your service.

**SOUTHERN CYPRESS MANUFACTURERS' ASSN.**
**1209 HIBERNIA BANK BUILDING, NEW ORLEANS, LA.**

GET CYPRESS OF YOUR LOCAL DEALER. IF HE HASN'T IT, *LET US KNOW IMMEDIATELY.*

**The Book of 100 Houses**

*Sent free to anyone who intends to build*



*Stained with Cabot's Creosote Stains*
*E. G. Garden, Architect, St. Louis*

This book contains photographic views of over 100 houses of all kinds (from the smallest camps and bungalows to the largest residences) in all parts of the country, that have been stained with

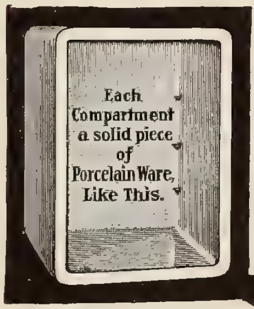
**Cabot's Shingle Stains**

They are designed by leading architects and are full of ideas and suggestions of interest and value to those who contemplate building.

SAMUEL CABOT, Inc., Sole Manufacturers,
1 Oliver Street, Boston, Mass.
Agents all over the Country

**The Home of Wholesome Food**

**A Snow-White *Solid Porcelain Compartment***


Each Compartment a solid piece of Porcelain Ware, Like This.

1¼ Inches Thick
Round Corners

It does away with cracks, joints, crevices, corners and other natural hiding places for dirt, odors, decaying food and dangerous microbes found in other refrigerators—the one *really sanitary* food compartment.

**The "Monroe"**

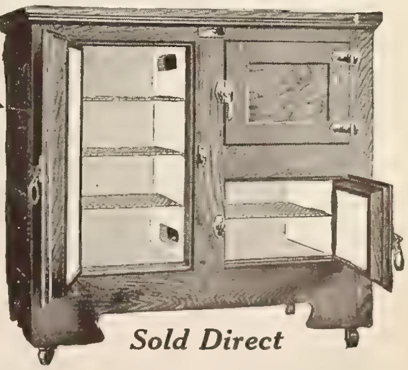
*A Lifetime Refrigerator*

**Send for Our Free Book on Home Refrigeration**

**It tells you how to keep your food sweet and wholesome—how to cut down ice bills—what to seek and what to avoid in buying *any* refrigerator. It is packed with money-saving hints, and every housewife and home owner should have one.** It tells all about the "MONROE"—describes its wonderful lining and the many other grand features that have given this refrigerator its position as the world's best.

**The "MONROE" is sold direct to you—at factory prices—on 30 days' trial. We pay the freight and guarantee "full satisfaction or money back."** ***Liberal Credit Terms if not convenient to pay cash.***

The "MONROE" is the **ONE REFRIGERATOR** with each food compartment made of a solid piece of unbreakable snow-white porcelain ware with every corner rounded as shown in above cut. The **ONE REFRIGERATOR** accepted in the best homes and leading hospitals. The **ONE REFRIGERATOR** that can be sterilized and made germlessly clean by simply wiping out with a damp cloth. The **ONE REFRIGERATOR** that will pay for itself many times over in a saving on ice bills, food waste and repairs. The **ONE REFRIGERATOR** with no single point neglected in its construction, and suitable to grace the most elaborate surroundings.



*Sold Direct*

**30 Days' Trial—Credit Terms Extended**

**MONROE REFRIGERATOR COMPANY**
(15) **Station 13, Lockland, Ohio**

Use OXIDE of ZINC Paints

THE COUNTRY HOUSE
to justify its owner's pride, must be *properly painted.*

The paint that is lasting in substance and color is

OXIDE OF ZINC PAINT

Is your home properly painted with the right kind of paint?

**We do not grind Oxide of Zinc in oil. A list of Manufacturers of Oxide of Zinc Paints mailed on request.**

**The New Jersey Zinc Co.**
**NATIONAL CITY BANK BUILDING**
**55 Wall Street, New York**

$1000 AN ACRE
**from Vegetables is not impossible**

This is being made by many truck and vegetable growers. You can do the same thing but you must know how.

**The Greatest 284 page Illustrated Book** on Vegetable Growing ever published, by Samuel B. Green, **Given Free** with a 3 years' subscription to **The Vegetable Grower.** The Rural New Yorker says of this book: "We consider this the most useful and practical book on gardening that we have examined." **The Vegetable Grower** is the best paper published for the truck grower and farm gardener. It is the same size as the Rural New Yorker, has departments for vegetables, small fruits and flowers for the market. Send $1.00 to-day for a three years' subscription and the book FREE. Satisfaction guaranteed or money refunded. Send to-day stamps, money, post office order or check.

THE VEGETABLE GROWER
**1222 Boyce Bldg. Chicago, Ill.**

"Ginseng and Goldenseal Growers' Handbook"

is the title of a most valuable reference book just out. The book, printed upon request of a number of growers throughout the United States, treats concisely yet fully upon every known phase of the subject; it has 122 pages besides 48 illustrations. It is purely instructive. Written, as it was, by one of the most successful growers, it is authoritative. It is the only work of its kind ever published. The edition is limited. Printed in both English and German. Price $2.50. Money refunded if not satisfactory. Descriptive circular free.

**J. H. Koehler, 762 6th St., Wausau, Wis.**

DAHLIAS 50 Sample Flowers of my choice dahlias $1.00 via Express f. o. b. Westerly. Each labeled with name and price of bulbs. Select your order now for next spring delivery.
**Geo. L. Stillman, *Dahlia Specialist*, Westerly, R.I., Box C-2.**

Three Magazines for Every Home

COUNTRY LIFE IN AMERICA
Beautiful, practical, entertaining. $4.00 a year. (Twice a month.)

THE WORLD'S WORK
interpreting to-day's history. $3.00 a year.

THE GARDEN MAGAZINE—FARMING
telling how to make things grow. $1.50 a year.

DOUBLEDAY, PAGE & COMPANY
**Garden City, New York**

**Rowe's Gloucester Bed Hammock**
Gives continuous outdoor service for ten years. Stronger and more durable than any other. Genuine bears our silk name label.
**Send for Booklet**
**E. L. Rowe & Son, Inc., 138 Duncan St., Gloucester, Mass.**

*Your* copy of our new Catalog is waiting to be mailed to you. Shall we send it?
J. STEVENS ARMS & TOOL COMPANY
**The Factory of Precision Dept. 281, Chicopee Falls, Mass.**

NEPONSET PAROID ROOFING
was selected by the United States Government experts for use on the Panama Canal Work
**F. W. BIRD & SON,** *Est. 1795,* **224 A Neponset St., E. Walpole, Mass.**
New York Chicago Washington Portland, Ore.

DUTCH BULBS and ROOTS
Direct from Holland. Catalog full of vital facts FREE
Write to-day to
Gt. van Waveren & Kruijff
American Branch House 140 N. 13th St. Philadelphia

*See detail advertisement on page 379.*

THE Keeley Cure

For Liquor and Drug Users

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## A Cultural Color Note on the Oriental Poppy

IN THE latitude of Boston the fresh pale-green tufts of the Oriental poppy may be discovered in early April, a heartening and lovely sight as the last snows of winter vanish before the spring sun. These have formed in the previous autumn, but so strong is the constitution of this remarkable perennial that it is safe even in such a winter as that of this year.

Here is a flower which does well in any good garden soil; sunlight is its prime necessity. Equally vital to its well doing is its transplanting *only* in August or September; therefore, will you, whose eye may light upon this page, take advantage of the months which are now almost upon us, if you consider revelling in the sight of this magnificent flower next June. Until last year, when two or three of the varieties of the Oriental poppy of recent introduction were revealed to me, I was ignorant of the development of this flower.

> "Then felt I as some watcher of the skies
> When some new planet swims into his ken."

Princess Victoria Luise, that huge bloom of delicious rosy-salmon color, was a sensation. One who enjoys the delicate suggestion of thin flame should stand before this flower transported with delight. And now the list of one of our leading plantsmen gives us no less than thirty varieties of Oriental poppy, in only five of which the word "scarlet" enters into the color descriptions. All the rest verge upon the salmon, apricot, amaranth, and deep mulberry shades. The lighter colors of these newer poppies are, as has been suggested to me, very like those of the Shirley poppy, and how remarkable to find in the larger, stronger, and more enduring flowers the charming color characteristics of that poppy whose one defect is its ephemeral quality.

From a color plate in the list of the plantsman just mentioned a very beautiful combination of color should be got by using the rich amaranth Mahony, described as "deep mahogany maroon," but which I should call a blackish mulberry, with Rose Queen, a fine satiny rose-pink. The revolution in color in these poppies transforms them at once into subjects of the greatest interest for the formal garden, the garden which precludes the use of scarlet, orange or any deep yellow. The rich darkness of Mahony would be a heavenly sight with the Dropmore anchusa rising back of it. These two should be used alone for a real nobility of effect.

Some plants are dull in their beginnings; not so with this, for from the first leaflet the lovely form and curve of each leaf is apparent, aside from the rarely good tone of green of the leaf-group. To fill the wide spaces of earth which should occur between plants destined for so rapid and so large a growth, tulips are suggested; to follow the poppy bloom and act again as a ground cover, seed of salpiglossis sown early, or of tall marigold, whose foliage and bloom will seem to be in August and early September the only inhabitants of this part of the border or the garden. If the objection be raised that the poppy leaves will shade such seeds in May and June, I reply that it is easy to so stake aside a leaf or two of the poppy in many places as to allow the sun full access to the little seedlings of annuals.

Michigan. MRS. FRANCIS KING.

## A Possible Salad Plant

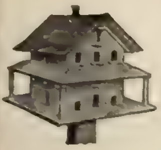
PROBABLY the most common weed in all vegetable gardens is "pusley" or purslane, which according to botanic nomenclature is *Portulaca oleracea.* Its pink, fleshy stems bearing small, round, sessile leaves, and radiating, like spokes, from the crown, is known to every gardener; and equally well, I presume, its marvelous tenacity of life. I have actually hoed out plants, left them upside down in the full sun, and returned a day or so later to find the roots bending over and entering the soil and preparing to take up their work where it was left off. When the tender stems are freshly gathered and boiled like spinach, they make a vegetable that to my taste is superior to either spinach or dandelion greens. The flavor is more delicate and bears just a hint of sourness faintly suggesting vinegar.

New York. E. S.

# Poultry, Kennel and Live Stock Directory

Information about the selection or care of dogs, poultry and live stock will be gladly given. Address INFORMATION DEPARTMENT, The Garden Magazine, 11-13 W. 32d Street, New York.

PUT UP - A purple martin house AT COST. And take care of 26 families of these beautiful little birds.



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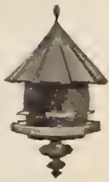
Correspondence Invited.



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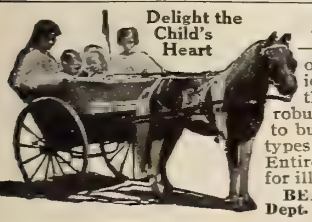

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—is an unceasing source of pleasure. A safe and ideal playmate. Makes the child strong and of robust health. Inexpensive to buy and keep. Highest types here. Complete outfits. Entire satisfaction. Write for illustrated catalog.

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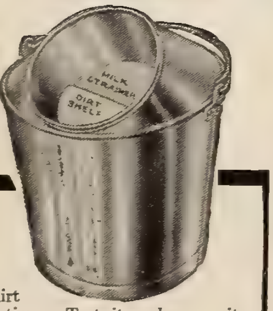

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**STERILAC COMPANY, 2 Merchants Row, Boston, Mass.**

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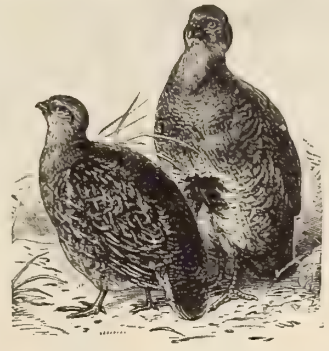

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**DUTCH BULBS and ROOTS**
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American Branch House 140 N. 13th St, Philadelphia

*See detail advertisement on page 379*

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*Quality* **LAWN MOWERS**
THE ONLY MAKE WITH CRUCIBLE TOOL-STEEL BLADES THROUGHOUT

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Buys a Sanford celery farm. Flowing artesian well guaranteed. Sub-irrigation, fine drainage, good subsoil, proven district, no interest; water and rail transportation. Our liberal contract allows six years to pay out.

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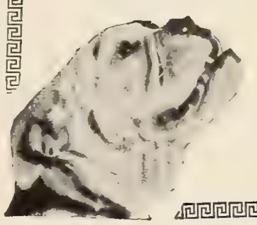
should be the best obtainable. Summer is *the* season when careless, haphazard feeding becomes most dangerous to dog and man.

**Austin's DOG BREAD**

Austin's Dog Bread is the safest food for your dog because it gives him just exactly what our 26 years of experience has proved his digestion needs; and because it is on his digestion that his disposition depends.

The value of Austin's as a nutrient is in its scientific composition of lean meat, bone meal and farinaceous substances; with its complete freedom from preservatives, chemicals, waste materials or by-products of any kind.

***Send Postal for Free Sample***



Just mention name, address and whether you want Austin's Dog Bread or Puppy Bread (for small dogs and puppies under six months) and give your dealer's name, please.

**Austin Dog Bread & Animal Food Co.**
**203 Marginal St., Chelsea, Mass.**

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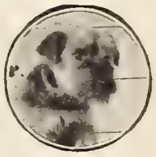
**Spring Valley, N. Y.**
Mr. Howard Keeler, Owner.



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and the only reliable guardian for the home. Stock of all ages for discriminating buyers. *If we can't please you nobody can.*

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Summer offering of brood sows and young stock. Every animal registered and if not satisfactory may be returned and your money refunded.

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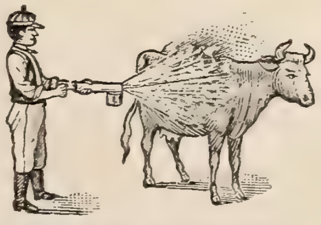

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Keeps Cows, Horses or Mules free from Flies, Gnats and other pests. It is cheap and effective. For pamphlet on "Bugs and Blights" write to

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Indispensable for Roses, Gladioli, Lilies, Herbaceous and pot plants. STRONG and DURABLE. Do not decay, but can be used many seasons.

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For DAHLIAS, Tomatoes, Pole beans, trees and shrubs where EXTRA strong support is needed.

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**FOR COLD CLIMATES** If you have not had Horsford's catalogue of Hardy ornamentals, which he grows in cold Vermont, it would pay you to send and get it, even if you don't want to buy now. It will tell you the kinds that can stand cold weather. He offers a good many of the wild flowers which are the easiest to manage, besides bulbs, shrubs, trees, vines and old-fashioned flowers. It is sent free upon application.

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The comforts and products of a country home are increased by employing a competent Gardener; if you want to engage one write to us. Please give particulars regarding place and say whether married or single man is wanted. We have been supplying them for years to the best people everywhere. No fee asked. PETER HENDERSON & CO., Seedsmen and Florists, 35 and 37 Cortlandt Street, New York City.

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Clear your Greenhouses of destructive Insects. The work is easy by the use of Standard Insecticide. Nurserymen and Florists who have used it strongly praise its power of extermination.

Does not injure foliage or plant, is non-poisonous and leaves no disagreeable odor — but will positively destroy all plant, animal or domestic pests.

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*Dilute with water 30 to 50 parts*

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YOUNG PEOPLE'S
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DEAR GARDENING FOLK:

THE bright summer days are here at last, and vacation time is here too. I can close my eyes and fancy I see dozens of boys and girls out in the sunshine working in their gardens, training the soft, green tendrils of the climbing vines and watching eagerly for every bud and blossom.

It is delightful to wake up early before old Sol has crept over the hills and run out to listen to the early morning conversation of our garden friends. And the first buds! How you watch for them to swell into full bloom. You wait and watch and some warm noon-day, you peep to see if the plants have blossomed, and there, bowing to you, are the loveliest, most fragrant flowers — and that is what it means to be a gardener! Do you wonder I want every boy and girl to join our Garden Club?

### LETTERS FROM MEMBERS

My desk is piled high with letters from boys and girls and their mothers who have joined our Club, telling me how much good our plan for helping gardening is doing. I feel very happy about it and I hope you will spread the good news among your friends so that no one who wishes to have a garden will be left out of our Club.

I am going to let you read some of the letters which I have received. They will tell you how our members are enjoying their vacation time gardening:

DEAR LADY GREENSLEEVES:

When I invited my Sunday school class to join your delightful Garden Club, the children were so eager to begin a garden at once that I had to hurry my spring sewing so as to help them. There are sixteen of us and the boys and girls have worked hard to earn the money to buy the seed and plants. Each afternoon we repair to a vacant lot near the church and work like elves. Our garden is beginning to look delightfully inviting. The children call you their garden fairy.

MRS. G. P.

DEAR LADY GREENSLEEVES:

I have the best sort of news for you. My seed that I bought and planted in April is growing fine. I have just set out some scarlet sage for mother near the front steps. I bought the plants with the money I made last week. You are all right to help us fellows make money. It was easy, too, just as you said it would be. I mean to keep on until I earn enough to make mother's garden the nicest one in Springfield.

ANDREW B.

DEAR LADY GREENSLEEVES:

Our school will soon be over and we girls are counting the hours now. We spend all our spare time working in our garden. Four of us have a plot together and we are going to try to win a prize this year. The lovely book you sent us arrived to-day and thank you so much. We have earned $6 already and spent it all on our garden. We hope lots of girls will join and have as much fun as we do.

YOUR GARDENING GIRLS.

DEAR LADY GREENSLEEVES:

I have only a very small backyard, but there is a large apple tree right in one corner and mamma has given me permission to plant anything I like and Mary has promised to keep the grocery boy from trampling on my flowers. The book you sent me is lovely. I read it every day up in the apple tree. I enjoy my garden so much.

FRANCES H.

### YOU ARE INVITED, TOO

You are invited to join us, no matter where you may live — whether in a big city, a little town, or the country. I will gladly help you earn the money to make your garden nice, too, and would like to have you share our good times.

All boys, girls, and grownups, too, who are interested in growing things are welcome to our Club. Membership is free.

Yours for a jolly summer,
LADY GREENSLEEVES.

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THE GREATEST DISCOVERY OF MODERN TIMES.
NATURES PLANT FOOD
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TRY IT and be astonished at the results. Vegetables and flowers need it. Will make your lawns look like velvet. Your rose-bushes and shade trees will grow as if in the tropics. Bonora infuses new life in all plants. Used and endorsed by the greatest authorities, Luther Burbank, John Lewis Childs, Dingee & Conard and others. Ask your seed dealer or order direct. Descriptive circular upon request. Put up in dry form as follows:

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| 1 lb. | making | 28 | gallons | .65 postpaid |
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Direct from Holland. Catalog full of vital facts FREE.
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PETERSON NURSERY

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Mention The Garden Magazine when you write.

*Climbing American Beauty Roses*

Twenty times as many blooms as the old American Beauty — each measuring 3 to 4 inches in diameter. Fragrance and beauty unsurpassed. Can be trained to trellis or grown as a pillar rose. Hardy as an oak. Send for particulars.

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**Farr's Oriental Poppies**

Next month (August) is the time to transplant these glorious bloomers. A score and more of the finest sorts are grown at Wyomissing Nurseries. ***I will send six handsome varieties for $1.***

My book "Hardy Plants" tells about Poppies, Peonies, and other plants for fall planting. I will send a copy if you expect to purchase.

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**Write today for our free Catalog**

Read of the success that other amateur and professional gardeners have achieved with Sunlight Double Glass Sash—how they have grown earlier—bigger—sturdier plants. Read how you can duplicate their success with very little trouble and expense. Write today.

**The Sunlight Double Glass Sash Co., 927E Broadway, Louisville, Ky.**

**APPLE GROWING** The healthier the tree, the better the fruit. The longer trees are sprayed with "SCALECIDE" the more beautiful, healthful and fruitful they become. "SCALECIDE" is the acknowledged leader of all soluble oils—the only one containing distinct fungicidal properties. "SCALECIDE" will positively kill all soft-bodied sucking insects without injury to the tree. Let us prove these statements. Send today for free booklet "SCALECIDE—the Tree Saver." Address B. G. PRATT CO., Mfg. Chemists, 50 Church St., N. Y. City.

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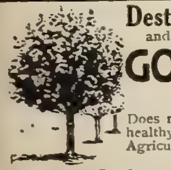
Use the sprayer that does the most work most thoroughly at the lowest cost.

**Brown's Auto Spray**

No. 1 fitted with Auto Pop Nozzle—most powerful and efficient hand outfit. Capacity 4 gallons. For large sprayers—Brown's Non-clog Atomic spray. Write for low prices and *Free Spraying Guide.*

**The E. C. Brown Co., 34 Jay St., Rochester, N. Y.**



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Does not harm the trees—fertilizes the soil and aids healthy growth. Used and endorsed by U. S. Dept. of Agriculture. **FREE** Our valuable book on Tree and Plant Diseases. Write for it today.

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Green Flies and Black Flies Too are easy to kill with
**"TIP-TOP"**
**BRAND**
**TOBACCO POWDER**
For Fumigating or Dusting **$3.00 per bag of 100 lbs.**
Write for free samples. MONEY WITH ORDER
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Insures home surroundings in keeping with the finest architecture. Our landscape department plans spacious grounds as well as smaller places, making them a delight to cultured tastes. Our nurseries furnish Wagner's Famous Roses, Hardy Flowers, Shrubs and Trees. Write for our free illustrated book, **"Plants and Plans for Beautiful Surroundings."**

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**Florists, Nurserymen, Landscape Gardeners.**

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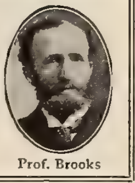

Prof. Brooks

**BURPEE'S SEEDS GROW** If you want a copy of the **"Leading American Seed Catalog,"** for 1912, address **BURPEE, Philadelphia.**

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***Direct from Holland***

The best Dutch Bulbs you can buy—solid, spotless, full of vitality, true to name and color—are described in our new Dutch Bulb catalog—just issued.

If you are planting bulbs this fall—or ever expect to buy them—you owe it to yourself to read this book. Tells briefly and definitely the difference between the big, flabby bulbs which disappoint, and the big, *solid* bulbs which give largest and best results. It tells and illustrates how to force bulbs for indoor bloom—indicates the best varieties for this and other purposes. Describes and illustrates the best new European introductions in tulips, hyacinths, narcissi and the many other Dutch Bulbs and roots which you should plant. Write for it to-day—the first edition is being rapidly exhausted.

Impelled by the increasing American demand for the choicest bulbs,

**The largest growers of Bulbs and Plants in Holland**

will hereafter sell direct to the consumer from their American Branch House. This is the first American Branch House of any Dutch Bulb grower, selling direct to the American flower lover—though the same firm has branches in all other leading countries. Through dealing direct with us, you gain in price as well as quality. Shall we prove that? We can—ask for our catalog—test our bulbs—judge us by results. Thereafter we will get *all* your business.

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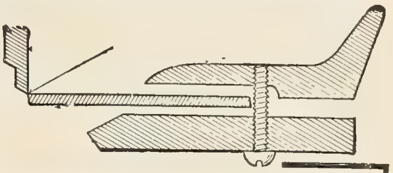
**American Branch House, 140 N. 13th St., Philadelphia, Pa., U.S.A.**
*Louis Berger, Mgr.*

***Home Offices and Nurseries: Sassenheim, (Haarlem), Holland. Other Branches: Moscow, Russia; Leipsic, Germany; Buenos Ayres, Argentine Republic; London, England; Guteburg, Sweden***

**ROWE'S LAWN RAZOR**
(PATENTED)

**Prolongs the Life of Any Lawn Mower**



*This device, a highly tempered Tool Steel Blade clamps between the stationary knife blade on the bottom of the Mower and the knife casting, much the same as does the blade of a well known type of safety razor.*

This idea is illustrated in the sectional drawing here shown and as the inventor says is "perfectly simple and simply perfect." If you have an old machine it will make it as good as new. If you have a new machine, the razor will improve the ease and quality of operation immeasurably. Here are some of the things it does: keeps a lawn mower *sharp* because it is self-sharpening; prevents revolving blades from nicking; does away with screw driver adjustments because it is self adjusting; gives worn bearings a longer life; is absolutely fool-proof and is positively guaranteed to perform all these functions.

Stop tinkering with files and emery. Throw that screw driver away. Order a blade while there is grass to cut.

**Send $1.00** **A blade will be sent prepaid to any address in the United States on receipt of $1.00.** Be sure to give width of cutter and style of mower. A circular of information will accompany the blade. Send today.

**THOMAS ROWE, Patentee and Inventor** **NARBERTH, PA.**

Club Women—Attention

You are invited to join The Ways and Means Club. Membership is free to all Club workers.

The purpose of this Club is to help women's clubs and organizations to obtain money for working funds and to promote ways and means for earning money among Club members.

For full particulars, address

ELINORE M. THAYER, Sec'y
The Ways and Means Club
11 West 32nd Street (8th Floor)
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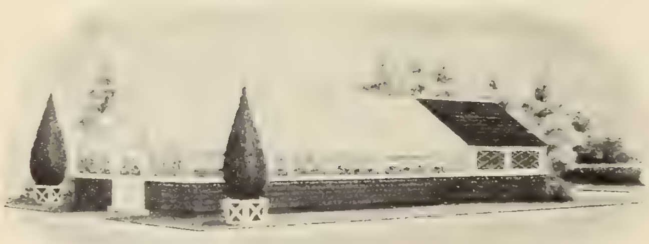
Evergreens *for* August and September Planting

NEXT spring when every available man has twice as much work as he can do, and everybody is fretting because they can't get men to do it—then is the time you will be heartily glad you planted your Hicks' Evergreens in August or September. Study out what you need now and order your evergreens. If some of the trees of your grounds need moving, have us do it. Don't think trees must either be cut down or stay in the one place. We have solved the tree moving problem to a certainty.

How about some holly like the tree at the left? We have some particularly choice trees just now.

If you can arrange to come to our nursery and make your selection, try and do it. If not, send for catalogs and write your order. We will give it prompt attention.

**Isaac Hicks & Son**
**Westbury, Long Island**



This is what we term our Stock House No. 1. Can you imagine a more practical arrangement? Greenhouse 10 x 25 and service building 8 x 10. Think of the results and the pleasure that can be derived during the long dreary winter months with such a beautiful glass enclosed garden. We ship this house to you complete ready for erection. This is not an unsightly sash house but my Patent Curve Eave Iron Frame. The same methods are employed in the construction as in the larger ranges of glass that we erect in all parts of the country. Send for Catalogue .G it describes this and other small houses thoroughly.

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It is specially selected, specially tested grass seed, and pulverized manure—the ideal combination to grow quick, hardy, lasting turf. For seeding new lawns or putting new life into the old one nothing equals **KALAKA.** Packed in 5 lb. boxes, express prepaid, at $1.00 per box, east, or $1.25 west of Omaha. Write for prices on special mixtures for special locations and purposes. Order today and have the best seed that money can buy. Get our *free* lawn book.

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The genuine "Cutaway" tools are used and endorsed by successful orchardists from coast to coast and bay to gulf.

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# SOUTHERN DEPARTMENT

## The Hard Work Continues

THE interest in garden work in the South begins to slacken now, but the actual work is just as strenuous as ever.

If some of the flowers and vegetables need protection from the hot sun, spread strips of old sacking or cloth a foot or two wide along the rows two feet or more above the plants, and also mulch all plants that seem to need it.

If possible irrigate the garden. Irrigating systems are used on several farms here in Georgia and the crops, especially corn, sugar cane, and potatoes, are greatly increased.

Continue to sow rutabaga seed until August, then begin sowing turnips. Spanish peanuts will also make a good crop in the Middle South if they are planted before the 15th, but it is safe to sow them up to the first of August in the Lower South.

Continue the sowing of annuals. Keep the soil moist and the plants partly shaded.

Cabbage and collard seed may be sown now for setting out in September. You want stocky plants with a dark color; therefore, be sure that they are kept well supplied with moisture. This also applies to annuals. Be careful not to give too much shade or allow the plants to grow too close together.

Take heed: This is the last month that melon seed can be sown. Soak the seed in water before using. It is also the last call for pumpkins, winter squashes and cucumbers. Early summer squash, however, can be planted as late as the 15th of August in the Middle and Lower South.

The corn needs frequent and shallow cultivation. If you want to plant any early field corn it must be done before the next two weeks, except in the Lower South, where it can be planted all through August.

During July the soil should be prepared for the bulbs of the beautiful Madonna lily, that have to be planted in late August or September.

Do not neglect the chrysanthemums and asters that are to flower during the next two months. Begin pruning, disbudding, and watering with both pure water and liquid manure.

When sowing seeds at this time of year, it is very important to firm the soil over them so as to hasten germination as much as possible.

Georgia. Thomas J. Steed.

## Cherry Trees as a Screen

CHERRY trees are attractive all the year, and, like the pear, are excellent for planting at the edge of the lawn. Those used in massed planting will bear considerable fruit; or else you can plant them from eight to fifteen feet apart, provided your garden is more than an acre in extent. My trees began blooming the year after they were planted, and have continued the good work for ten seasons. After a few years their branches became interlaced, but this only added to their beauty. The branches are cut every few days from March on, placed in crocks of water in the cellar for a few days, and then brought into the living room, where the blossoms open to perfection. But this, of course, could not be done if the trees were being grown for fruit alone.

Early Richmond is, perhaps, the best variety for landscape work, as it seldom grows high, is perfectly hardy, and withstands insect pests. The trees should be two or three years old when set out; these cost about fifty cents apiece. If care is taken to grow them with short trunks—a foot or two is ample—they will form low, bushy tops and will be excellent for screening objectionable views.

Illinois. Fred Haxton.

## Now is the Time To Plant Strawberries

SUBURBAN

GARDEN COLLECTION

### Pot Grown Plants

**Success** (Best Early)
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**Marshall** (Best Mid-season)
**"The Hunn"** (Best Late)

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| 24 Plants (6 each) | 4 varieties | $1.00 |
| 48 Plants (12 each) | 4 varieties | 1.75 |
| 72 Plants (18 each) | 4 varieties | 2.50 |

Our plants, ready for delivery after July 15th, are strong, pot grown; much superior to layer plants and will yield a good crop of berries next Spring, and can be shipped any distance safely. **Separate Varieties. 50c. per doz., $3.50 per 100, $30.00 per 1,000**

**Stumpp & Walter Co**

50 BARCLAY STREET NEW YORK CITY

## Wave Crest Grass

### For Lawn and Pasture

**Roots and leaves at every joint. Makes a thick mat**

THIS grass is a Bermuda variety, originally imported during antebellum days for lawn purposes. Acclimated for over a century's growth on the Carolina Coast. Propagated only from the roots, does not mature seed, and when set out twelve inches apart will in three or four weeks give you a rich, velvet-like lawn which will improve with age, and after the first year will be practically indestructible. Makes a sod two to three inches deep which will choke out all other grasses and weeds, and stand any amount of wear. Does not require the care that other lawn grasses do which makes it especially desirable for large estates and homes where there is insufficient water supply. For terracing and holding sandy land together has no equal. It will thrive where other grasses perish.

As an introductory offer we will ship sufficient roots to set out one hundred feet square for $3.00 f.o.b. We will mail for 25 cents sufficient quantity for experimental purposes.

*If interested and have lawn troubles write us*

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## Thorburn's Strawberry Plants

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**J. M. THORBURN & CO.**

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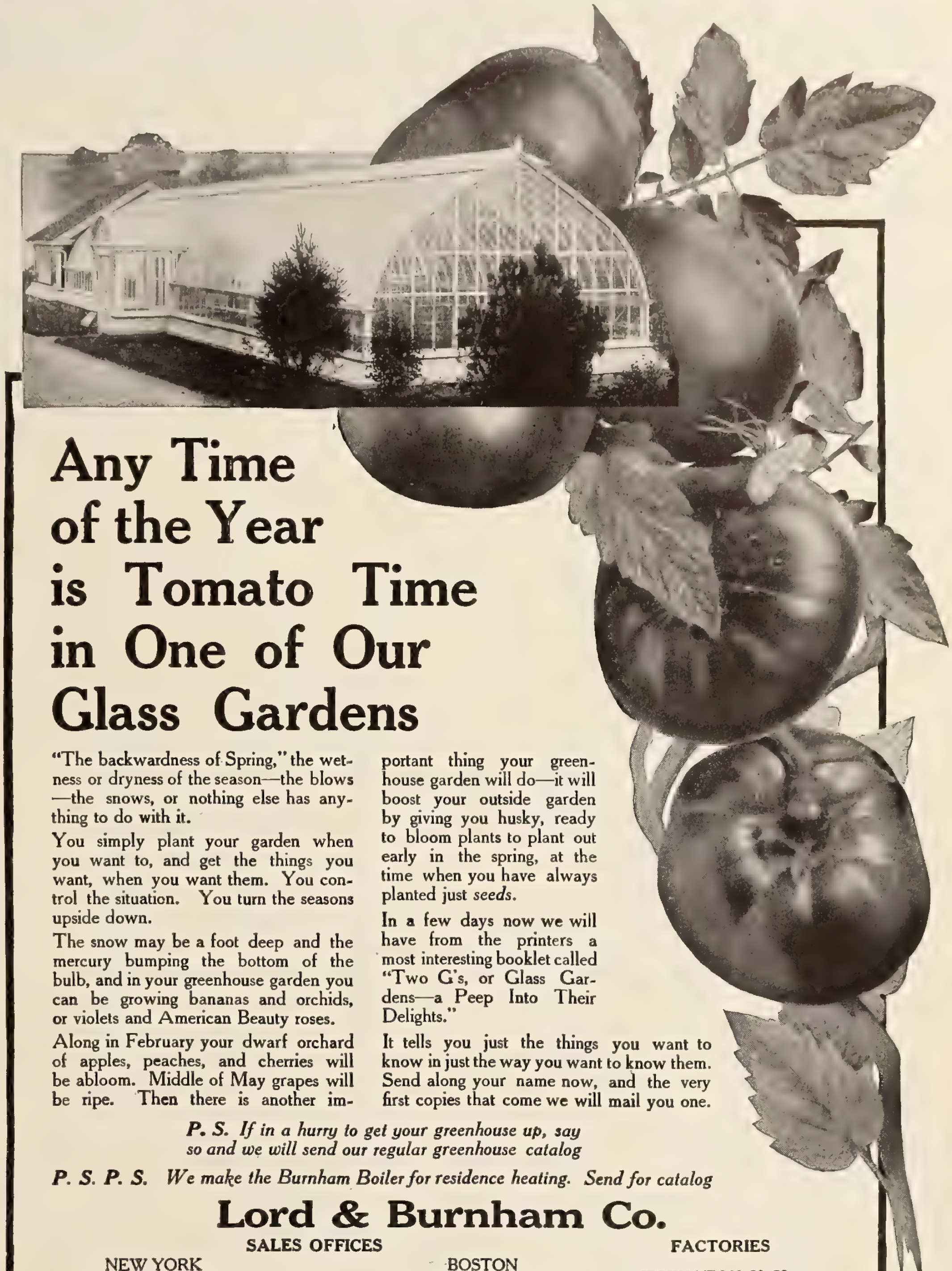
T. H. SUTTON, 1100 Sherwood Ave., Louisville, Ky.



## Any Time of the Year is Tomato Time in One of Our Glass Gardens

"The backwardness of Spring," the wetness or dryness of the season—the blows—the snows, or nothing else has anything to do with it.

You simply plant your garden when you want to, and get the things you want, when you want them. You control the situation. You turn the seasons upside down.

The snow may be a foot deep and the mercury bumping the bottom of the bulb, and in your greenhouse garden you can be growing bananas and orchids, or violets and American Beauty roses.

Along in February your dwarf orchard of apples, peaches, and cherries will be abloom. Middle of May grapes will be ripe. Then there is another important thing your greenhouse garden will do—it will boost your outside garden by giving you husky, ready to bloom plants to plant out early in the spring, at the time when you have always planted just *seeds*.

In a few days now we will have from the printers a most interesting booklet called "Two G's, or Glass Gardens—a Peep Into Their Delights."

It tells you just the things you want to know in just the way you want to know them. Send along your name now, and the very first copies that come we will mail you one.

***P. S.*** *If in a hurry to get your greenhouse up, say so and we will send our regular greenhouse catalog*

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# ·THE·TALK·OF·THE·OFFICE·

"To business that we love we rise betime
And go to 't with delight."—*Antony and Cleopatra*

## LETTERS

We wonder if so many interesting letters come to men in other sorts of business? Perhaps publishers are especially favored by the confidences of people whom they have never seen?

It has very often been said that almost anybody can edit a periodical better than the editor, and make a fire better than the fire-maker. That this is a true statement is proved by thousands of letters which come to us intimating that the writer is better able to judge of the literary value of some things than Doubleday, Page and Company.

For instance:

> I see that you are publishing with success a novel by . . . which you say is in a new field of fiction, etc., etc. . . . All this indicates how narrow is your viewpoint. Simply because this author has become one of the "inner circle" she could write the poorest stuff and you would publish it with avidity and throw away dozens of other books in every way its superior. . . . I am sending to you by express the manuscript of a book which some people in our town have told me is in every way vastly superior to any book written by . . . whose praise you sing so long and loud.
>
> The question is will you be able to recognize ability when you see it or are you blind to the merit of an author just because he is unknown?

This form of letter is duplicated a hundred times, and we could stand it better were it not for the fact that with them come manuscripts of sometimes a 1000 pages and an average, we should say, of from 400 to 500 pages of typewriting, representing months and often years of work on the part of their authors.

Of book manuscripts alone, Doubleday, Page & Company return from ten to a dozen a day representing for the most part, we regret to say, a pathetic spectacle of time wasted.

Here is a manuscript reader's letter to show the other side of this difficult question:

> I have been thinking, and referring again to my report on No. . . . a novel by . . . which I faint-heartedly recommended for acceptance; and which recommendation I now wish to withdraw. Deliberate reflection has caused me to realize that no real good can come from publishing this book, and I am frank to admit that I recommended it because in execution it is better than hundreds I have been so laboriously reading. This deadly average of mediocrity I am convinced has almost upset my judgment as to the standard which I am perfectly aware should be moderately high. Not so high that a newcomer should be held up to an impossible standard but not so low that a book should not show in some way — in sincerity, imagination or literary power — that it may take some part in the world's affairs if published. The Mss. No. . . . is simply commonplace; only a little less commonplace than the general run, and that is all that can truthfully be said of it.

This office memorandum is printed here not because it is in itself of interest but to show how the first instinct is toward acceptance until most publishing houses accept more books than they can properly and effectively handle.

To complete the circle of this correspondence concerning manuscripts and book publishing we add two paragraphs from a bookseller's letter:

> I understand from a talk I had with one of your travelers — that you propose to publish a fewer number of books and push more vigorously those that you do issue. Your new resolution pleases me because all publishers in the last ten years have increased the number of books — especially mediocre fiction — extraordinarily, apparently in the hope of getting a "best seller." Do you realize that this has gone on to such a degree that even salesmen often tell us that they cannot be sure of such and such a volume and show no enthusiasm in selling it?
>
> In my opinion publishers should not accept any book which they cannot earnestly and honestly back as worth while; poor books when sold injure the buying activities of readers — you "kill the goose," etc. You will make enough mistakes even when you feel confident that you have the real thing and I hope you'll stick to your guns and bring up the quality.

But all letters are not pessimistic. As we write we have before us a sheaf of twenty-three letters which have accumulated in a few days; all of them about Mrs. Corra Harris's book "The Recording Angel."

Three of these refer to George Eliot.

For instance:

> *Not since the days of George Eliot* has there been anything so good. Perhaps you recall the words she puts into the mouth of one of her radical speakers in *Felix Holt*. After all, though, does it not go to prove that if we are to have preaching, that preachers should be removed from their present status of dependents and made economically free of their environment?

Here is another:

> I have just finished reading "The Recording Angel," and I cannot resist the temptation to write you how much I enjoyed it, as well as your other stories. No doubt you wish that I were gifted with a will strong enough to say, "Get thee behind me," to a temptation fraught with such terrible consequences to an unfortunate and helpless victim.
>
> Now that the preliminary apologies are out of the way, let me say what immense pleasure I have obtained from all your work, from "The Circuit Rider's Wife" down to (or up to?) "The Recording Angel." The stories themselves have been interesting, vastly so! But it is your "asides," your observations upon human, and Divine, nature, and things in general that have delighted me most. The very audacity of some of these, the originality of all of them, leave me almost gasping with surprise and pleasure.

A dozen pages of this magazine could be filled by letters about Mrs. Gene Stratton-Porter's books whose fame extends in an ever widening circle. In the month of May we printed and sold over 100,000 of the new edition of "The Girl of the Limberlost," and that these books touch the hearts of a great multitude, brightening and helping, is made clear by the dozens of letters which come like this one:

> It is difficult to speak of the work of Gene Stratton-Porter and not to call upon all the superlatives of praise in the language. "The Girl of the Limberlost" is a delightful book: the kind of book that brings a pleasant mistiness to your eyes and a lump in your throat which makes you feel deliciously sobby while you are laughing; and if you don't know and value that sensation you miss much

"Freckles," by the way, has gone on the stage, and will get into the big cities this fall.

Another class of letters come to the service department which answers, after close study, letters about "How to buy a farm," "How to select investments," and the thousand and one queries about the "Garden." We hope these answers do some good in the world. The letters are carefully read, and information sought by experts, but often they ask questions beyond us, like this one:

> I am about to get into trouble and I am going to ask you to help me out. Some of my neighbors differ in the time to plant and how to plant. They say the time to plant potatoes is in the "dark of the moon," when the beginning is; some say in "arms"; some in "feet"; some one place and some another. And other garden seeds the same — also setting out trees? Some say the "dark of the moon" from the new to the full; so please give me your ideas in regard to the moon and its signs and what effect it has on planting.

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IT'S the catalog you want if you want to know the really important things to know, before putting your money in a greenhouse.

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Send for it and look thoroughly into both whys — then make your decision.

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this work, when requested, without cost, and the charge for treating trees in many cases is no more than the cost of carting dead trees away. All Davey Tree Experts are Graduates of the Davey Institute of Tree Surgery. They are employed by the Davey Tree Expert Company. WE NEVER LET GOOD MEN GO. Before you let any man touch your trees, demand to see his credentials proving him qualified. All Davey Tree Experts carry such testimonials. If you own trees write for our interesting book and arrange for an examination.

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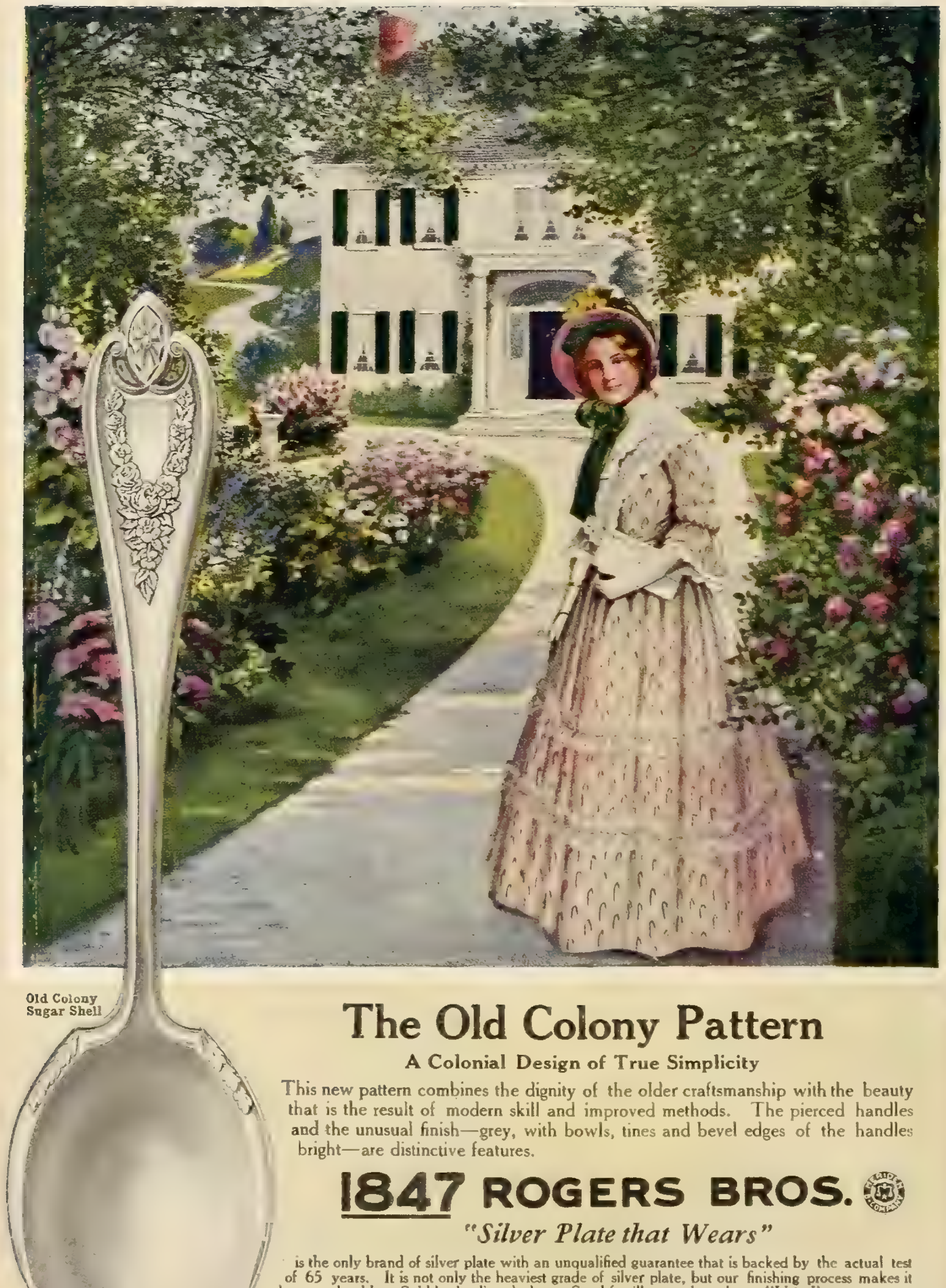

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